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DIESEL RAILWAY TRACTION SUPPLEMENT

The August issue of THE RAILWAY GAZETTE Supplement, illustrating and describing developments in Diesel Railway Traction, is now ready, price 1s.

NOTICE TO SUBSCRIBERS

Consequent on the paper rationing, new subscribers cannot be accepted until further notice. Any applications will be put on a waiting list and will be dealt with in rotation in replacement of subscribers who do not renew their subscriptions.

GOODS FOR EXPORT

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this paper should not be taken as indicating that they are available for export

POSTING "THE RAILWAY GAZETTE" OVERSEAS

We would remind our readers that there are many overseas countries to which it is not permissible for private individuals to send printed journals and newspapers. THE RAILWAY GAZETTE possesses the necessary permit and facilities for such dispatch.

We would emphasise that copies addressed to places in Great Britain should not be re-directed to places overseas

TO CALLERS AND TELEPHONERS

Until further notice our office hours are:

Mondays to Fridays 9.30 a.m. till 5.30 p.m.

The office is closed on Saturdays

ANSWERS TO ENQUIRIES

By reason of staff shortage due to enlistment, we regret that it is no longer possible for us to answer enquiries involving research, or to supply dates when articles appeared in back numbers, either by telephone or by letter

ERRORS, PAPER, AND PRINTING

Owing to shortage of staff and altered printing arrangements due to the war, and less time available for proof reading, we ask our readers' indulgence for typographical and other errors they may observe from time to time, also for poorer paper and printing compared with pre-war standards

Holiday Railway Travel

THE difficulties which have arisen at railway stations in London and elsewhere as the result of heavy movements of passengers, were the subject of a statement by the Joint Parliamentary Secretary of the Ministry of War Transport in the House of Commons on July 28. Mr. Noel-Baker said that the Ministry adhered to its view that any scheme of rationing, or permits, or the advance sale of seats would create greater difficulties than it would remove. Nor could the Government solve the problem by providing extra trains, which would have to be at the expense of the priority now accorded to essential war traffic. The public had been warned not to travel, and if, nevertheless, journeys to holiday resorts were undertaken, travellers must expect to suffer great discomfort and inconvenience, and they ought to realise that they were inflicting similar discomfort and inconvenience on others whose journeys were necessary in the national interest. He would not encourage the hope that there would be any relaxation in the present restrictions, and he asked the House and the public to remember that victories abroad did not reduce pressure on the railways here, but inevitably increased it. The Government had to prepare for a greater strain on the railways in the early future than there had ever been before. Mr. Noel-Baker's statement is reported in full on page 144.

Travel Rationing

The recent overcrowding of trains and the limitation of bookings by L.M.S.R. on the Southend line, has again raised the question of travel rationing. In the course of an interview with the Political Correspondent of *The Sunday Times*, Lord Leathers, Minister of War Transport, touched on this subject, and stated "Neither they (the public) nor I want a bureaucratic system set up to judge the rights and wrongs of particular journeys, and they would certainly grudge, as I would grudge, the claims on manpower which such a system would involve." Ever since the subject of travel rationing was first raised, the objection has been that it would involve the employment of a large clerical staff. We are still of the opinion that, as we suggested early in 1942, a rough and ready method of checking unnecessary travel would be the adoption of the "Points system" by making it necessary to present coupons from the ration books when purchasing railway tickets for journeys in excess of 50 miles. We are interested to see that a similar line of approach to this problem is suggested by Mr. S. Muir Mackenzie in the course of a letter to *The Manchester Guardian*. He says "Why should not the issue of emergency ration cards be rationed to one per book and further cards issued only on production of evidence that the journey was necessary?"

Home Railway Interim Dividends

The home railway dividends for the first half of this year have in every case borne out the general expectation that they would show no change from those declared twelve months ago. The payment of 2 per cent. on the consolidated ordinary stock of the Great Western Railway Company, of 2½ per cent. on the preferred ordinary stock of the Southern Railway Company, and of 1½ per cent. on the London Passenger Transport Board's "C" stock, were recorded in our last week's issue; the directors of the two northern lines made known their decisions shortly after we had gone to press. The 4 per cent. second preference stock of the London & North Eastern Railway Company is again to receive 1 per cent. as an interim distribution, and full rates for the six months are forthcoming on the guaranteed and preference stocks of the London Midland & Scottish Railway Company. Consideration of an ordinary dividend has obviously been postponed by the L.M.S.R. directors until the full accounts of the year are before them, as was the case last year, when 2½ per cent. was paid on this stock. No details have been forthcoming as to the financial results of the railway operations for the first half of the year. Because of the operation of the financial agreement with the Government the scope for variation in revenues is small, and can most reasonably be considered as a whole after the close of the full period.

Post-War Export Trade

The debate in the House of Commons on July 27 on export trade after the war elicited a number of points on Government policy. The President of the Board of Trade declared that the Government aim was to join with other nations in creating "an expansive world economy." It would be necessary to export on a larger scale than before the war, and he believed that some measure of instruction and of direction of exports would continue to be necessary in the early days of peace. It was not intended to disinterest ourselves in Latin-America, where there were enormous possibilities of expansion, and where we had a

"proper and deliberate right to trade." Mr. Dalton paid tribute to the United Kingdom Commercial Corporation Limited, and he would give no undertaking that it would be closed down after the war. In certain directions he felt it would be extremely valuable in peacetime. The Overseas Trade Department was preparing two reports, one geographically on individual markets, and the other industrially to indicate to particular industries the conditions in the more important markets.

Great Western of Brazil Railway

The directors of the Great Western of Brazil Railway Co. Ltd. have issued a circular dealing with letters which have appeared in financial newspapers. They point out that the writers of these letters have taken what, in the considered view of the board, appears to be an over-optimistic view of the company's prospects and have even foreshadowed the possibility that the payment of dividends on the company's preferred and ordinary stock may be resumed in the near future. Delays in the mail will prevent the holding of the annual general meeting before September next, but the directors point out that the present increased receipts reflect wartime conditions and absence of road competition, which may be quite transient. Costs, including wages, are still increasing; the provision of interest and sinking fund on the company's debenture stock is still twelve months in arrear; and before the payment of dividends can be considered, large sums must be found to overtake arrears of renewals to the company's track and plant. It has not been possible to provide for this hitherto, and it may involve heavy expenditure if prices of materials remain at present levels after the war.

Overseas Railway Traffics

Prices of the securities of British-owned railways in Argentina have reacted most unfavourably to the meagre concession in tariffs granted by the recent Argentine Government decree which, while benefiting the railway staffs, will give no relief to the stockholders. Since the turn of the financial year the traffics of the four principal Argentine railways have shown little expansion except for a moderate increase on the Buenos Ayres Great Southern and even this advance is subject to the continued rise in costs. A warning circular has been issued by the directors to the stockholders of the Great Western of Brazil Railway, which for the period from January 1 to July 24, 1943, has secured an increase of £160,400 in gross receipts.

	No. of week	Weekly traffics	Inc. or decrease	Aggregate traffic	Inc. or decrease
Buenos Ayres & Pacific*	4th	82,500	+ 1,000	278,400	- 32,520
Buenos Ayres Great Southern*	4th	1,29,360	+ 1,030	459,600	+ 15,300
Buenos Ayres Western*	4th	43,720	- 1,080	159,300	- 10,920
Central Argentine*	4th	111,981	- 16,488	384,720	- 41,907
Canadian Pacific	29th	1,244,800	+ 244,400	30,824,500	+ 3,684,600

* Pesos converted at 16½ to £

Aggregate gross earnings of the Canadian Pacific Railway for the first six months of 1943 amounted to £27,246,200, an increase of £3,039,600 in comparison with the first half of 1942, but the net earnings of £4,240,600 showed a decrease of £149,000.

Argentine Rail Tariff Increase Rejected

The new Argentine Government has rejected the request, made last January, of the British-owned Argentine railways for an additional increase in rates and tariffs to cover higher operating costs. In a decree issued last week, an increase of 3 per cent. in cargo, parcel-post, cattle, luggage, and passenger rates, was granted, but it was stipulated that the proceeds should go to the Railway Workers' Fund. An increase of a further 2 per cent. is authorised on ordinary and special tariffs, but in this instance also the railways are to receive no benefit, for revenue derived from this source is to be used in forming a common fund for distribution among married railway workers who are in receipt of small salaries. The railways, in their application to the Minister of Public Works, had asked for an advance of 20 per cent. on goods, livestock, and parcel rates, and of 10 per cent. on passenger and luggage rates. In putting forward the request the railway companies pointed out that unless some alleviation of their difficulties was forthcoming, disorganisation of the railway system and the ultimate bankruptcy of the privately-owned companies was inevitable.

Transport in Argentina

The impression that the new régime in Argentina is unlikely to be more sympathetic in its attitude towards British capital employed in that country than its predecessor, which was noted in our issue of July 9, seems to find support from Sir Bernard Docker, Chairman of the Anglo-Argentine Tramways Co. Ltd., in his statement which was circulated with the annual accounts

of that company. He spoke of the "hopeful rumours" circulated in certain newspapers which had not borne fruit, and at the annual meeting on July 27 he referred to steps taken by the new Government in relation to transport in and around Buenos Aires. The Government has ordered the Control Commission of the Buenos Aires Transport Corporation to report within ninety days on the corporation's ability to comply with the co-ordination law; the elimination of losses by the reorganisation of services; adjustment of the capital of the Government, and the municipality in the corporation; adjustment of the corporation's contracts; and a number of other matters. Furthermore, the taking over of the *colectivos* and buses not yet incorporated has been suspended, and a former decree concerning the reorganisation of capital of C.H.A.D.O.P.Y.F.—whose underground railways had been taken over by the corporation—has been cancelled. A reconsideration of the financial scheme for a settlement of that company's affairs (see page 132) has been ordered.

Fifty per Cent. Taxation

A striking example of the relationship between taxation and revenue in the passenger road transport industry was given by Mr. Sidney Garcke a few days ago, when presiding at the annual general meeting of the Aldershot & District Traction Co. Ltd. For the third successive year he mentioned the progressively heavier burden of handling increasing traffic. This, naturally, has meant additional revenue, but the costs have more or less kept pace, so that the greater profit carried to the balance sheet is less than £4,000. The improvement in the net profit does not benefit the shareholders, but only swells the company's heavy Excess Profits Tax. The profit & loss account shows that the total paid away in taxation of one kind or another, including rates, fuel tax, and road licences, is well in excess of £300,000 a year. Comparison of this payment with the company's revenue shows that a twopenny passenger contributes one penny in taxation and pays the other penny for his ride. Mr. Garcke remarked that under present conditions there could be no cause for grumbling, but he felt that such a heavy burden of taxation should be lifted at the first opportunity from a service so vital to the well-being of the nation as was public transport.

New Railway Commission for Peru

With the object of improving transport facilities in the interests of industrial development, the Peruvian Government has established a commission to study the railways of the country and consider the possibilities of modernising and amplifying the present railway lines. The commission is asked to prepare a plan of gradual developments and to recommend new railway routes; to consider the better use of the National Railways, and the possibilities of constructing branch lines from the main routes; and to study possible modifications to existing railway regulations and tariffs. As indicated by the article and map published in our June 11 issue, the railways of Peru consist of disconnected systems, leading from the coast towards the mountains, and comprising a total length of 1,947 route miles, exclusive of mining lines and plantation railways on sugar estates. The Peruvian Corporation owns and operates 1,081 miles, mainly of 4 ft. 8½ in. gauge. It received the basis of its present system through the transfer of railways in settlement of foreign debt in 1890. Eight other privately-owned railways have a total of 405 miles. The State Railways consist of seven short lines totalling 461 miles, and using three gauges.

Future of the Wartime Engineering Student

Mr. A. S. Quartermaine, M.C., Chief Engineer, G.W.R., himself a graduate—and now a Fellow—of University College, London, and a Vice-President of the Engineering Society of the College, is particularly well fitted to sum up the wealth of opportunities which may be expected, after the war, to be opened to those who are present-day students. During the last war, Mr. Quartermaine served with the Royal Engineers in Egypt and Palestine, and held the position of New Works Engineer for the Palestine Military Railways. He observed the false trade boom of the early 1920's when (as he says): "Engineering students were entitled to expect expansion and ample opportunities but many were disappointed. The lessons of the inter-war period, however, should ensure no similar disappointment after the present conflict." Mr. Quartermaine, in a recent issue of the *Journal* of the University of London Engineering Society, outlines the chief provinces which will provide the students of today with their big chances in the future reconstruction. The impetus which technical developments have received in certain directions during the war are likely to be reflected in industry generally; and so young engineers of the immediate future are likely to have many more opportunities for research work than were available a generation ago. Finally, Mr. Quartermaine

makes an appeal for the training of engineers to be so planned as to ensure that not merely technical skill, but due consideration for those engaged on the actual carrying-out of the various projects, shall receive its proper share of encouragement.

Transport and the War in China

In some American quarters the suggestion has been made that the Japanese have not really been defeated by the Chinese in the upper Yangtze region, but that they had withdrawn "according to plan." This view has been refuted by the *New York Herald Tribune* in a temperate and well-informed article which showed that a consideration of the lines of railway communication clearly indicated both the value and the success of the recent Chinese military operations. The Japanese hold both ends of three railways in Central China, on all of which the Chinese hold the middle sections. These are the Peiping—Hankow, the Canton—Hankow, and the Hangchow—Nanchang. For nearly five years the Japanese have been "making preparations" to reopen through communication on these railways, which traverse rich and productive country, but the Free Chinese have retained, and now strengthened, their hold on the middle sections, compelling the Japanese to make wide detours by sea or inland waterway for the maintenance of their inter-army communications. The failure of the Japanese to improve their position in relation to these important railways has left broad avenues of military communications open to the Chinese armies, which may prove of even greater value in the very near future. Brief surveys of transport in Free China and Central China respectively, based on the most recent information available in this country, are given on pages 142-3.

Holiday Travel

THE unprecedented scenes at the principal railway stations during the week preceding August Bank Holiday make it abundantly clear that, despite the repeated appeals to the British public not to make unnecessary journeys by rail, the public considers that a holiday in the country or by the sea, with all its incidental discomforts, is certainly not unnecessary and thoroughly justified after four years of war. Most London termini were thronged with crowds throughout the whole of the week, but the pressure was heaviest at Paddington and Waterloo where the number of passengers waiting for trains frequently ran into several thousands.

Although many of the key and experienced railwaymen are now serving with H.M. Forces, the railway police and platform staffs kept the situation well under control, despite the facts that vast crowds had to be regulated from early morning until late at night. The staff concerned deserve the highest praise for the manner in which they coped with their task, which was rendered more difficult by the abnormal weather which persisted throughout the week. Friday was probably the busiest day at Paddington and Waterloo, particularly at night, when thousands of people arrived to make the journey to the west by night trains.

Crowds, of course, make news, and the Press generally was not backward in writing up the stories. It did not anticipate the anti-climax, however, which was that it had so impressed the public with the desirability of travelling before the great rush came on Saturday, that when Saturday arrived both the G.W.R. and S.R. were each able to cancel one of their principal trains to the west because there were insufficient passengers to justify running them! Loads of 1,500 to 1,600 passengers were common in trains with seating capacity for 600 to 700, with the result that standing in compartments as well as corridors was a frequent feature of the journey. Nevertheless, the public was content to travel in this manner so long as it could board the trains. Incidentally it may be mentioned that, contrary to statements in certain quarters, the railways did not run any more trains than they did last year, and they complied strictly with the instructions of the Ministry of War Transport in the matter.

Although the Press accounts of the volume of railway travel probably assisted in spreading the load through the week, there is little doubt that indirectly they added to the companies' difficulties as, in an endeavour to be reasonably certain of seats, passengers commenced arriving some four, five, and even six hours before the departure time of their trains. Railway circulating areas are necessarily limited in size, but they are sufficiently large to enable the companies to deal with large crowds arriving and leaving within an hour or so. When, however, queues of some 400 to 500 people commence forming for each of several trains anything up to six hours before their departure, the difficulties of maintaining a free flow to the platforms become intensified. In this connection the use of loud-speakers in directing and controlling crowds has proved of tremendous assistance to the companies.

Apart from the main problem of holiday travel, which will

clearly have to be reconsidered in the light of this experience, the two minor problems of luggage and bicycles will require attention. Passengers would greatly assist themselves, their fellow-passengers, and railway staffs if they reduced the quantity of luggage which they are now carrying, and the difficulties associated with dealing with scores of bicycles, interspersed with a few tandems, in luggage vans already packed to capacity with luggage, perambulators, and Service kitbags, are self-evident.

Rail Corrugations

ELSEWHERE in this issue is published an article by Mr. J. H. Burgess, Bridge Engineer, Queensland Government Railways, on rail corrugations, in which he gives some information on this subject based on experience in Queensland. Corrugations on railway rails are sometimes short pitch, at most about 12 in. but more often the real difficulties arise from continuous long-pitch undulations, often called "battering," spaced at 2-ft. to 5-ft. between the crests and increasing in depth until the bad running of the trains at these places makes necessary replacement of the rails. The depth at this time may be as much as $\frac{1}{4}$ in. in the hollows. The development of deep battering is particularly found on the sharper curves of lines over which multiple-unit electric trains are operated and where the axle loads are often quite reasonable. These railways usually carry an intensive traffic at relatively high speeds on curves. There have been many discussions in the past 30 years or more at continental and international congresses, and at other meetings on this subject, but interest is still far from exhausted. Research work which began a few years before the war will no doubt continue afterwards on a more scientific basis than that provided by many of the data collected in the past.

The writer's reference to the pressure of the tyre causing failure of the surface of the railhead can be agreed as likely to be the basic cause, but probably it is the case in practice only when accompanied by sliding of the wheels in place of rotation. The statement that the solidity of the rail bed is the greatest cause of overstrain may be questioned. The track construction of the earlier tube lines in London provided sleepers with the middle carried on a concrete road bed, and the ends free. For a considerable time this form of construction was credited with the undoubtedly remarkable rail life obtained. With the extension of lines for appreciable distances in the open the original fabric brake blocks on the trains were supplanted by cast-iron blocks; it was found this change was followed by greatly augmented rail wear so that the elastic support lost some of its credit. Track installed in the open section of a railway on special elastic sleepers in ordinary ballasted road-bed gave an arrangement with a considerable reduction of solidity but, however, did not show freedom from rail corrugation. Some of the measures against corrugation mentioned by Mr. Burgess can be summarised as really good maintenance. It will be interesting to know if, as a practical result when rails are set vertical, the top surface continues to wear level or whether it develops the equivalent of a cant after considerable wear.

Rails of 12 to 14 per cent. manganese, when installed on curves with heavy wear and corrugation, have been found not to last longer than ordinary rails. Maybe the wear is too rapid for the material to assume its work-hardened form. No kind of rail available seems proof against battering. In fact, it is difficult to prove conclusively that any very considerable extension of rail life takes place with special composition or heat-treated steel at localities subject to heavy battering. It must not be inferred, however, that some benefit does not arise with certain types of steel.

Where corrugated or battered rails are not unduly reduced in cross-sectional area, they can be re-used in the track after having the head planed or ground straight in the workshops. This practice, however, is far from general. There is as yet no known prevention or cure of "corrugation" available, but the use of non-metallic brake blocks reduces the liability very greatly. The polished tread of the wheel which results from the use of these blocks keeps a burnished surface on the rail head. This is a most effective measure if some loss of adhesion of wheel to rail can be accepted, and considerable progress is being achieved in reducing the drawbacks.

Grinding the rail surface *in situ* by a specially-equipped grinding train is an effective measure against battering, but only if carried out at an early stage of the development. It seems most effective when allied to the use of non-metallic brake blocks. It may be remembered that the Paris Metropolitan lines in their early years caused serious vibration to adjacent property, but it is said great benefits arose later with the use of brake blocks of beech wood soaked in oil, as then with the use of rail-grinding trains corrugation was practically eliminated.

Sir Alan Mount's Annual Report

THE annual report for 1942, presented to the Minister of War Transport by Lt.-Colonel Sir Alan Mount, Chief Inspecting Officer of Railways, appears again in the abbreviated form adopted in 1940. The Railways (Notice of Accidents) Modification Order (Statutory Rules & Orders, 1939, No. 1214) which came into force at the outbreak of war, is still applicable and a direct comparison with pre-war years is possible only in the matter of fatalities. Traffic in 1942 was exceptional and heavy and the year opened with abnormally cold weather, which imposed great strain on the operating and maintenance staffs. There was an unusually heavy sick list, but the difficulties resulting from restricted lighting and shortage of power and staff were materially alleviated by a very mild autumn and winter. Fortunately, too, there was no recurrence of the serious air raids with which the railways had had to contend two years before. The disadvantages under which all have had to work, nevertheless, have been considerable, and having regard to the complexity of the intense traffic on the railways of this country, the Report gives, in Sir Alan's words "some indication of the reliability of their operation in the war effort and shows what a high standard of safety was maintained during 1942."

examine blackout arrangements, with the object of providing curtains or removable shutters to signal boxes and giving signalmen better vision during daylight.

A most unusual accident occurred at Beighton on February 11, 1942, by which 14 soldiers were killed, when a heavy steel plate, one of a load of 7, which had become displaced in shunting and, unnoticed in the darkness, was foul of a main line, cut through the side of a troop special, doing considerable damage. The particular method of loading plates of the type concerned has since been abandoned. At South Pelaw Junction, Pelton, on April 20, 1942, a mineral train got out of control after the fracture of a link in the steam-brake rigging which, because of the design of the equipment, rendered the brake useless. The signalman diverted the runaway to a branch line, but the engine overturned, killing the crew, and there was great destruction of stock. There was a flaw in the link which could not have been detected by ordinary examination, but as there was no record of a similar failure the company's practice as to examination and overhaul of brake gear was not criticised. A review of sectional timings over the line and imposition of a speed restriction, however, were recommended. At Waddon, on November 4, 1942, an electric train standing in the station in a thick fog was forgotten by the signalman, after he had spoken to the guard and told him the reason for the train being held by the starting signal. He had not used the switch-hook of his

Causes	Type of Accident					Total
	Collisions	Deraillments	Running Into Obstructions	Fires in Trains	Miscellaneous	
1. Failure of train crew (including guard) :—						
(a) Passing signals at danger	29 (22)	32 (8)	— (—)	— (—)	— (—)	61 (30)
(b) Other irregularities or want of care	21 (15)	63 (39)	— (—)	— (—)	— (—)	84 (54)
2. Failure of signalman :—						
(a) Irregular block working	3 (11)	— (—)	— (—)	— (—)	— (—)	3 (11)
(b) Other irregularities or want of care	14 (16)	23 (9)	— (—)	— (—)	— (1)	37 (26)
3. Failure of crew and/or signalman and/or other staff... ..	21 (15)	11 (13)	— (—)	— (—)	— (1)	32 (29)
4. Failure of other staff in operating departments (excluding faulty loading : see 10 below)	7 (2)	9 (5)	— (—)	— (—)	— (—)	16 (7)
5. Accidental	1 (5)	1 (1)	1 (2)	— (—)	— (—)	3 (8)
6. Defective draw gear	13 (14)	23 (19)	— (—)	— (—)	2 (—)	38 (33)
7. Defective stock other than draw gear	— (—)	29 (28)	— (—)	— (—)	— (—)	29 (28)
8. Defective engines	— (—)	16 (3)	— (—)	— (—)	— (—)	16 (3)
9. Defective track and/or signalling apparatus	1 (1)	23 (14)	— (—)	— (—)	— (—)	24 (15)
10. Faulty loading	1 (—)	22 (13)	— (—)	— (—)	1 (—)	24 (13)
11. Due to snow, landslides, flooding, etc.	2 (—)	3 (17)	139 (37)	— (—)	— (—)	144 (54)
12. Miscellaneous... ..	3 (4)	29 (23)	4 (5)	— (1)	— (—)	36 (33)
Totals	116 (105)	284 (192)	144 (44)	— (1)	3 (2)	547 (344)

The report again includes the informative table introduced in the previous one, reproduced above, setting out the causes of the various cases of train accident, properly so called, with the figures for 1941 as a comparison. In these accidents 27 passengers, 9 servants and 1 other person were killed, compared with 50, 7, and 19 respectively in 1941; the figures for seriously injured were 38, 6, and 2, compared with 62, 16, and 15 respectively in the previous year. (There was an exceptional reason for the high 1941 figures relating to "other persons.") The total of all accidents to trains involving more than 3 hr. delay was 547, compared with 344 in 1941 and 276 in 1940, but this includes 144 cases due to snowdrifts, landslides, etc., against 54 in 1941. Failure of the human element accounted for 233 of these accidents, compared with 157 in 1941; in 145 cases, as against 84, train crew failure was the cause and deraillments predominated, emphasising the difficulties of operation under war conditions. Mechanical failures of rolling stock and engines accounted for 83 of these accidents, as compared with 64 in 1941 and 59 in 1940, and defective track and/or signalling apparatus caused 24; the 1941 figure was 15 and the 1940, 8. The effects of war conditions are clearly observable in this deterioration.

Many of the cases were dealt with by correspondence or consultation but five were made the subject of a formal inquiry and published report, some presenting features of exceptional interest. In the collision at Cowlares East Junction on January 30, 1942, in which 14 lives were lost, a signalman had brought a light engine out of a siding and it stopped immediately outside his box, for the purpose of going through a cross-over. He forgot that there were two engines in the siding and on being offered an express on the occupied line mistook the second engine still in the siding, which he could see from where he stood, for the first, which he could not then see because of permanent blackout on his windows. He assumed the latter engine had not come out, reset the road, accepted the express, and lowered all his signals. The fireman had failed to carry out Rule 55 (b). The companies have agreed to

Sykes lock-and-block instrument, although the rules required it, and made a false use of the releasing key to free his home signal and allow of a second train being accepted. The blunder was discovered, too late, when the guard re-visited the box, and a collision followed, in which the motorman of the oncoming train was killed. The accident would not have occurred had a member of the station staff been obliged to work a release from the platform before the signalman's became effective and the company was requested to consider the extension of co-operative releases.

The accident at Didcot on November 13, 1942, by which 4 lives were lost, was due to the driver of a freight train travelling on a loop line misreading his signals and accepting those for the adjacent main line, which were lowered for an express. He appears to have thought he was running on the main line; he overran the loop outlet signal and a derailment occurred, fouling all but the engine and first two vehicles of the express, with serious results. The driver's initial mistake was unexplained, as the loop entrance signal was quite clear, although his view of it from the right of the engine was not good and he may have relied on his fireman. The present unavoidable shortage of experienced firemen is considered to place additional responsibility on drivers, particularly on engines with right-hand controls. The details of all these accidents, with summaries of the official reports, have duly appeared in these columns, with appropriate comment.

The number of level crossings in Great Britain remains the same and, as in 1940 and 1941, no passenger was killed or seriously injured as a consequence of an accident at a crossing. There were 57 serious casualties arising from 50 accidents in 1942, compared with 77 such cases in 1941, when there were 65 accidents. Of the 57 casualties 41 were pedestrians, of whom 11 were killed and 3 seriously injured at occupation crossings, where a higher standard of intelligence and care on the part of users is called for. No specific responsibility is placed on the railways by legislation for safeguarding the movement of road vehicles or pedestrians at such places. Attention has again been specially drawn to the need for care on the part of military drivers; three military personnel were killed or seriously injured while traversing crossings.

Turning now to movement and non-movement accidents, the report states that 309 inquiries were held in 1942, as against 316 in 1941, involving fatal or serious injuries to 319 persons, nearly all being railway servants; the remainder were principally contractors' servants and persons at work or transacting business on companies' premises. Of the 110 recommendations made 97 were adopted, 12 not adopted, and 1 is still under consideration. A considerable number of verbal suggestions were also made and accepted at the time of the inquiries and many accidents were dealt with by correspondence with good results. Movement accidents to passengers were, as usual, mainly due to misadventure, want of caution or misconduct. In three cases of fatality, intoxicated passengers climbed, or attempted to climb, on to the roofs of carriages in motion and were struck by overbridges. More interest attaches to the accidents which befell railway or contractors' servants, especially men working on the track.

Practically all cases of injury to men working on the line may be assumed to be reported. If an employee is struck by a train a fatality or injury usually results. A comparison between present figures and those for earlier years is possible. There were 63 cases of staff being struck while working (including 3 women), compared with 77 in 1941, and 47 were fatal. The number of accidents was 59, the lowest for many years, and

the place where they were to have their dinner and were struck by an overtaking train after they had got out of the way of one coming towards them. Shunting accidents resulted in 55 fatalities (including 1 woman) compared with 58 in 1941, 60 in 1940, and 39 and 32 for the 5-year periods, 1935-1939, 1930-1934 respectively. Standing or stepping foul of vehicles is a class of accident attributable mainly to want of care and "forms a regrettably high proportion of shunting fatalities." Fatalities in coupling accidents amounted to 9 men, compared with 5 in 1941. Inquiries were held into all the fatal shunting and coupling accidents with one exception, and into 25 of those which did not involve loss of life. Of the total casualties, 55 killed and 228 seriously injured, 90 occurred during blackout, but only in 32 instances were conditions of restricted light considered to be contributory. Four women were killed and 12 seriously injured in movement accidents, all during daylight.

We reproduce the customary table covering accidents due to all movement on rail, with our usual comparative columns. The liability to casualty to passengers in train accidents was 1 passenger killed in 60 millions carried and 1 seriously injured in 42 millions. Passenger and freight train mileage worked out at about 43 millions per fatality to a servant, or 64 millions per case of serious injury. There were remarkably few serious train

Annual average, 1925-1929		Annual average, 1930-1934		Annual average, 1935-1939		Particulars	Year 1941		Year 1942	
941		796		746		Accidents to trains	344 (serious damage only)		547 (serious damage only)	
9,141		5,772		4,149		Accidents to, or failures of, rolling stock or permanent way ...	166 (serious damage only)		258 (serious damage only)	
K.	L.	K.	L.	K.	L.	Casualties:—	K.	L.	K.	L.
91	3,733	74	4,394	86	5,342	Passengers	154	271	140	291
210	3,267	183	2,592	198	2,576	Servants	271	468	251	467
67	158	51	146	54	120	Other persons	109	43	64	41
368		308		338		Totals	534	782	455	799
1,661		1,612		1,704		Passenger journeys originating, excluding free conveyance (millions):	980.9		1,164.3	
401.3		416.2		443.3		Railway companies	351.4		443.3	
680,197		603,621		593,741		Passenger and freight train mileage (millions):	351.7		357.6	
122.6		112.6		114.3		Railway companies	25.1		26.2	
29.0		26.8		29.4		L.P.T.B.	589,880*			
0.9		0.7		0.7		Companies' servants employed (March)	121.1		120.5	
18		17		18		Shunting mileage (millions)	35.4		35.7	
						Light engine mileage (millions)	1.4		1.2	
						All casualties per million train miles:	2.1		2.1	
						Killed	(seriously only)		(seriously only)	
						Injured				

* Figures for 1939, the latest published

casualties compare very favourably with the averages for 1930-1934 and 1935-1939, 84 and 78 respectively. Want of care still accounts for the great majority of cases and the report observes that "although there was one less casualty under this head than in 1941 and three less than the average figure for the 5-year period 1935-1939, it is disappointing that the improvement is not greater, having regard to the general reduction in accidents to men and women working on the line through being struck by engines or trains."

The need for strictly observing Rule 234 (a) is again stressed, and Sir Alan says "Only by insistence upon strict regard to safety regulations can a reduction in such cases be obtained. The desirability of educating the staff to avoid personal risk in the performance of their duties is again emphasised and is especially important at the present time when less experienced men and women may be employed on track maintenance. While much can be done by correct example on the part of gangers and others in authority, the distribution of safety literature is an effective means of keeping this important subject in the minds of all concerned; every effort should be made to maintain such propaganda as far as possible."

Among the accidents detailed in the report may be noted an example of a driver moving backwards in a tunnel without realising it, after an error in manipulating the reversing gear when correcting engine slip; two men, who had stood clear of the train in the first instance, were overtaken as they were walking correctly in the facing direction, and one was seriously injured.

Most of the accidents to men walking or standing on the line, or when proceeding to or from work, were similarly due to lack of individual caution; one instance was that which occurred in Falkirk tunnel when men were walking through to

accidents, notwithstanding an increase of about 20 per cent. in the number of passengers carried compared with 1941. The rise and fall in the annual averages of deaths in train accidents since the last war is given by the following figures:—

1920-24	...	25
1925-29	...	38
1930-34	...	25
1935-39	...	39
1940	...	50
1941	...	76
1942	...	46
		Annual averages

Women are being increasingly employed and now total over 100,000. They have, the report states, "shown remarkable aptitude for their new duties and are responsive to instruction intended for their personal safety," but "they suffered an increase in serious casualties." The blackout, it is stated, continues to be a contributory cause of accident to passengers, in spite of efforts to warn them, and improved lighting conditions. "Everything possible is being done," observes Sir Alan, "to increase efficiency and safety at night within the limits that war conditions prescribe, and it is hoped that improvements in lighting of trains, stairways, platforms, circulating areas, marshalling yards, etc., which have been recently agreed, will be reflected in the figures for 1943." For ourselves, we think that our railwaymen and railwaywomen have adapted themselves, from the first day of the war, through the raids and every other danger and difficulty, to the onerous conditions imposed by the conflict in a manner deserving of all praise. The high degree of safety in working revealed by the report shows that the public has no ground for feeling that our railways are not being as safely operated as they were before war conditions threw so many new burdens on the staffs.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Transport and Its Track

July 23

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—I have read with interest your editorial on this subject in your issue of July 23. I am somewhat mystified to find, however, that while the writer justly claims that the railway is the cheapest form of traction ever invented because train loads can be hauled by only a few men at high speeds, he illustrates this by a table indicating that pre-war a train of 57 wagons took no less than *three days* to travel from London to Birmingham, a distance of about 110 miles. This he compares with one day by road and five days by canal. As the table excludes terminal costs, it is legitimate to assume that it also excludes terminal time, yet it is inconceivable that a freight train would not accomplish such a journey in less than 72 hours on the main line between two such important places. The Ministry of Transport statistics show the average freight train miles per train hour were 8.67 in December, 1938, so that even on this basis, which includes all short distance journeys, a distance of 110 miles would be covered in 13 hours. The discrepancy is so startling that I feel there must be some explanation. Can you supply it please?

Yours faithfully,

CONSIGNOR

[The costs reflect the duration of trip, including time loading and discharging; they also reflect handling, in so far as this affects the time vehicles are standing idle, but apart from this the costs are for conveyance only. In these circumstances, three days for the rail journey is not unreasonable. It has also to be remembered that the costs assume the stipulated loading for the throughout journey in both directions and that this operates throughout the year.—Ed. R.G.]

The First Workmen's Train?

Bordyke, Burgess Hill,
Sussex. July 16

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Specially cheap fares for workmen were inserted by Parliament in Railway Acts, such the L.C. & D., 1830; North London, the following year; and the Great Eastern, 1864. The workmen's trains required by the above Acts were introduced when the sections of the various railways affected were opened. It has been generally assumed these were the first trains to convey workmen at special fares. Such is the case, so far as the writer is aware, by Statutory compulsion.

In February, 1848, railway communication between Glasgow and Edinburgh and London was completed (*via* Carlisle), and the quickest train took 15½ hours. By August, 1849, the Caledonian Railway, in conjunction with the L.N.W.R., was providing accommodation for the "working classes" as set out by the following advertisement:—

CALEDONIAN RAILWAY.

NOTICE

For the ACCOMMODATION of the WORKING CLASSES between EDINBURGH, GLASGOW and LONDON only

A THIRD CLASS CARRIAGE

is attached on SATURDAYS to the train leaving Edinburgh at 9.15 p.m., and Glasgow, South side, at 9.5 p.m.

The same arrangement also applies to the Trains leaving Euston Station, London, on Saturdays, at 8.45 and 9 p.m.

Fare: THIRTY SHILLINGS.

Children under Ten Years of Age Half-price

By order

J. W. CODDINGTON, Secretary.

125, George Street, Edinburgh,
Aug. 15, 1849.

The distance was 402 miles, hence the fare was 3s. 6d. less than the Parliamentary fare of 1d. a mile, but that was not the whole of the advantage. The trains passed over the following railways: Caledonian, Lancaster & Carlisle, Lancaster & Preston, and L.N.W.

Railways in the early years of Parliamentary trains were particular to time such trains so that they did not connect at the frontier stations; the wait was usually several hours. On a journey such as that from Edinburgh to London, one night and possibly two nights may have been spent on the journey, but not in the trains, so the workmen's third class carriage on a through train was a considerable benefit to the "working

classes." A second advantage was held out—the workman could take his children under ten years old for 15s. each.

It is evident that the concession was not intended to benefit workmen in the same manner as did the later Statutory workmen's tickets.

The 1849 workman could only start his journey, up or down, on a Saturday night, hence he would have to spend a week between commencing his journey and starting on the return trip—should he intend to return!

The quickest service in August, 1849, to Edinburgh occupied 12 hours; this express left Euston at 9 a.m. The time to Glasgow by the train was 10 minutes longer. Express fares were probably charged, and it may have been first class only. The writer has no timetables of the period available, but doubtless the other trains were considerably slower.

Yours faithfully,

G. A. SEKON

Tunisian Throwback

The Flat, Ashdale,
Hascombe, Nr. Godalming,
Surrey. July 27

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—There is a closer connection between the Tunis and Jersey Railways than the interesting account in your issue of July 23 of the unwanted locomotive would show.

The former Ingénieur en Chef Neel was the son of a Jerseyman and a cousin of mine. When the Jersey Railways were extended from St. Aubin to Corbière, the 4 ft. 8½ in. gauge from St. Helier to St. Aubin was reduced to 3 ft. 6 in., so as to make a running from St. Helier to Corbière possible. Certain rolling stock of a rather unusual design then became redundant and was, if my memory serves me right, shipped to the Tunis Railways. I do not know what happened to the locomotives—perhaps they went too.

Another brother, M. Louis Neel, was a former Ingénieur en Chef of the P.L.M. Railway, so they may, alternatively, have found their way there.

As a matter of interest, the wife of the Tunis Neel was well known as an explorer of Tibet, who entered that country alone, disguised as a pilgrim. Whether she is still alive I have no means of knowing.

Yours faithfully,

R. GAUDIN

The Baker Valve Gear

c/o Home Farm, Leamington,
Nr. Rugby. July 30

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The recent correspondence as to the use of Baker valve gear on locomotives in this country, it is to be hoped, will contribute toward a reawakening of its possibilities in this field.

It was through the writings of Mr. Lawrence that this particular gear first became well known to those interested in small locomotive building, and I myself can confirm his remarks on the efficiency of this gear on this work.

Baker gear made to Mr. Lawrence's specification was fitted to a ½-in. scale Southern "King Arthur" to look after the steam distribution to two cylinders ½ in. bore, 1½ in. stroke. This little engine has travelled many miles since 1936 when I finished her, both on continuous running, and on the more arduous short return runs that my track permits, in each case performing efficiently with loads of from one to four average weight adults. The amount of wear that has taken place in the gear is almost negligible, in spite of the fact that all pin joints are soft and not bushed.

A larger model of the gear has also been fitted to a ¾ in. scale Southern "School" class engine this year. It has been used in conjunction with Gresley combined motion to serve three cylinders each 1 in. bore, 1½ in. stroke. So far, due to transport difficulties, no long non-stop runs have been possible, but the little engine promises well, and has already done a considerable amount of passenger hauling at local fetes.

It is remarkable that such an apparently excellent mechanism possessing a much more mechanical construction than most other gears should not have been adopted in this country. The unit construction makes it possible of extensive standardisation, and easy replacement, two points which generally count for so much in present times. Further views both for and against this gear will be awaited with interest, especially if it should eventually be given a trial in actual practice on a modern express locomotive.

Yours faithfully,

J. H. OWEN,
A.M.I.Mech.E.

The Scrap Heap

SEATS FOR M.P.S.

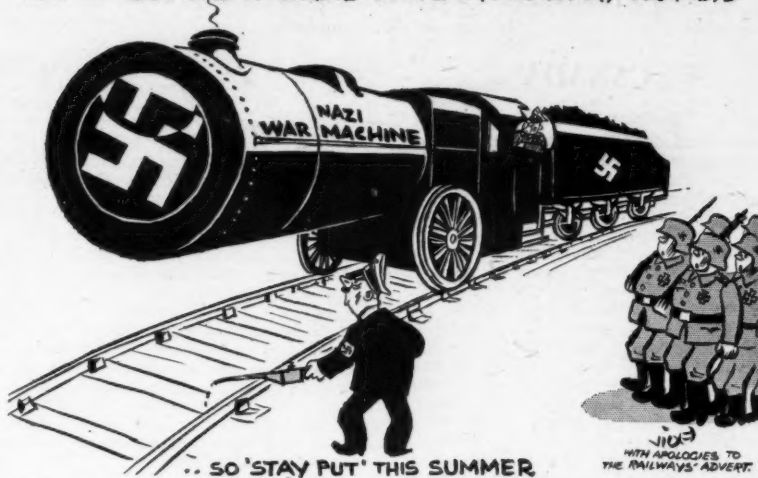
I understand that special travelling arrangements on the railways are being made for M.P.s during Bank Holiday week-end. They have been advised that if they want to be sure of attending the subsequent sittings of the House they should remain in London. If they must go to their constituencies they are promised reserved compartments on the journey from London, but coming back they will have to take their chance with the public. Recently, members have been arriving late for the House because of traffic congestion. No member will be able to reserve a train seat for himself individually. Reservations can only be made for parties of six or eight M.P.s travelling together. So far so good, but there is a warning. The railway companies can promise reserved compartments, but they cannot guarantee that M.P.s will be able to make their way through the crowds. I believe also that the railway companies have entered a caveat to the effect that if their good intentions towards M.P.s do not work out as planned, extenuating circumstances will be taken into account. They also warn M.P.s that it will be wise to be at the station a considerable time before the train is due to leave.—From "The Londoner's Diary" in "The Evening Standard."

A VETERAN G.W.R. LOCOMOTIVE

G.W.R. locomotive No. 1159, class 0-4-2, stationed at Oxford, is 79 years old and still working auto trains, and can still attain a speed of over a mile a minute with ease. Constructed at Wolverhampton, it was made of such good material that, when sent to Swindon 15 years ago to be condemned, it was found to be in such good running order that it was put back into service. It takes the schedule of the Oxford and Reading diesel car when the latter is resting and other local branch services operated with auto cars.

We have recently had a welcome and tangible example of the careful way in which the British main-line railway companies are handling their paper salvage campaigns, despite the enormous volume of paper which they are handing over for

THERE ISN'T EVEN HALF AN ENGINE TO SPARE FOR UNNECESSARY JOURNEYS



"The German plan of a summer offensive must be considered completely frustrated."—Stalin

[From "The News Chronicle"]

(Based on R.E.C. poster designed by Mr. Reginald Mayes, L.M.S.R. Staff Artist.)

repulping. This took the form of telephonic information from Mr. G. H. Loftus Allen that a redundant volume of *Herapath's Railway & Commercial Journal* for 1853 had come to light. That journal, which was established in 1835, is the oldest constituent of *The Railway Gazette*. The old volume was one that had been presented to Mr. James Shaw of the London & North Western Railway; it has now been included in our library by courtesy of the L.M.S.R.

SAILING BY RAIL

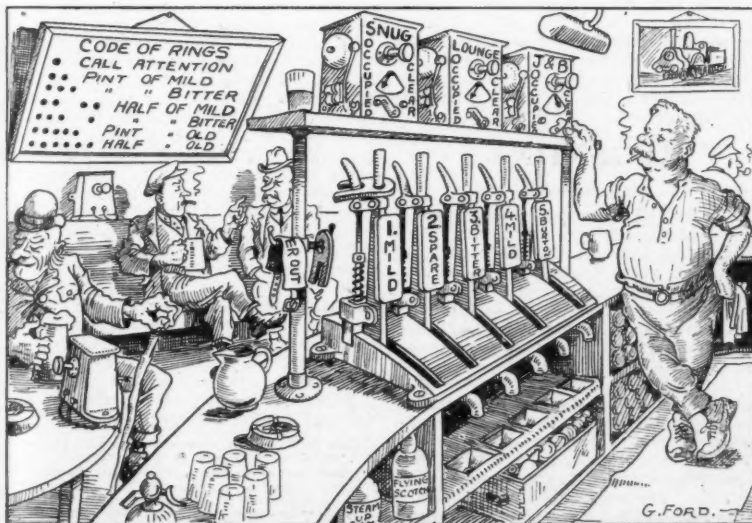
The Sydney & Louisburg Railway, in Cape Breton, both in its present condition, and partly on a different site in former years, presents many features of interest, but the following is rather out of the ordinary. An employee had an engagement to take a lady to a dance, at which he intended to pop the question, and he spent too long in buying a present, and missed the last train. The staff at the machine shop came to the rescue, and

rigged up a hand-car with a mast and sail, and after a shove off, the young man made a quick trip of ten miles, in less time than the train would have taken, in consequence of which he was successful, and got happily married.—Adapted from an article in the "Halifax Herald," Nova Scotia, of June 18, 1942, by Norman Thompson.

TEN LITTLE BUREAUCRATS

[The following verses are reprinted from "Saturday Night," Toronto, to which they were contributed from an anonymous source. It is suggested in "The Journal" of the Institute of Journalists that in the last line the word "Whitehall" should be substituted for "Ottawa."]

One little Bureaucrat had nothing much to do.
"I must have some help," he said, so then there were two.
Two little Bureaucrats, one each for Air and Sea.
What about the Army? So then there were three.
Three little Bureaucrats, no one from the Law.
"We've got to have things legal," so then there were four.
Four little Bureaucrats said, "Let us connive
To get a dollar-a-year man," so then there were five.
Five little Bureaucrats were in a nasty fix.
They had no Statistician. So then there were six.
Six little Bureaucrats, with little claim to Heaven,
Got themselves a Clergyman, so then there were seven.
Seven little Bureaucrats, for to make a date,
Had to have a Rubber Stamp, so then there were eight.
Eight little Bureaucrats, for to wine and dine,
Had to have a Treasurer, so then there were nine.
Nine little Bureaucrats, but so far all were men,
Added on a Lady one, and then there were ten.
Ten little Bureaucrats, and 'tisn't hard to tell
That if you give some folks an inch they'll surely go to Ottawa.



At the sign of the Lock and Block

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

CANADA

Holidays-with-Pay

The National War Labor Board has issued an order establishing holidays with pay for employees of Division No. 4, Railway Employees' Department (A.F. of L.) on the same terms and conditions as those at present enjoyed by Division No. 4 on the Canadian National Railways. The board disallowed applications by Division No. 4 Railway Employees' Department for orders that employees be paid for time lost through illness brought about by the conditions under which they work, and that time-and-one-half be paid for all Sunday work to those employees who, while working on Sunday, have an "assigned day off" later in the week.

In its reasons for the judgment, the board said the applicants had requested that railways comprised in the Railway Association of Canada should adopt, and introduce as a provision of the existing agreement as to employees represented by Division No. 4, the "holidays-with-pay" plan now in operation on the Canadian National Railways and the Temiskaming & Northern Ontario Railway. The board said that no such holidays-with-pay plan had ever been introduced by the Canadian Pacific Railway, and the net result was that some 60 per cent. of the employee group represented by Division No. 4 enjoyed holidays with pay, although the remainder, mainly employees of the C.P.R., did not. The judgment said the board's ruling on this question was considered justifiable in circumstances where some 60 per cent. of the workers concerned already enjoyed the privilege.

It was noted that this particular application had been dealt with on its own particular merits, and that the decision was not to be considered as a precedent establishing any general holidays-with-pay plan.

[UNITED STATES]

Middle-West Floods

Between May 18 and 27 water from fourteen swollen rivers caused much damage to railway property, and delay to trains, in six Middle-West states. About two million acres of land were flooded, and tracks and bridges were washed out at many points. Flood waters were at their highest at St. Louis, Missouri; Dupo and Beardstown, Illinois; and Okmulgee, Oklahoma. The Wabash River in Indiana rose 27 ft. at Vincennes to the highest level on record, and caused trouble at Logansport, Lafayette, Terre Haute, and elsewhere. In Illinois, the Illinois and Sangamon Rivers rose up to 29 ft., and Springfield, Petersburg, Peoria, and Beardstown were badly hit. Flood waters from these rivers poured into the Mississippi, causing the latter to rise 38½ ft. on May 23, the highest since 1844; as a result, the Missouri River formed a new channel, bringing the confluence of the Missouri and Mississippi to a point 6 miles from St. Charles, and submerging the great freight yards of the Missouri Pacific Railroad at Dupo, Illinois. At Muskogee, Arkansas, the Arkansas River reached a level of no less than 48½ ft. above normal on May 21, and the bridge of the St. Louis-San Francisco Railway at Muskogee was threatened by water and debris.

Many embargoes had to be placed on the

movement of freight traffic, and by May 23 the flood waters had caused such dislocation that the Interstate Commerce Commission declared a transport emergency in the Middle West, and authorised any railway holding or receiving freight to divert or re-route it by any open channel irrespective of directions as to routing. Some particularly praiseworthy work was done by the Chicago & Eastern Illinois Railroad in protecting its tracks, as a result of which it was the only railway operating in southern Illinois, and handled trains of the Chicago, Milwaukee, St. Paul & Pacific, Baltimore & Ohio, Missouri Pacific, New York Central, Nickel Plate, and Cotton Belt companies in considerable numbers over various sections of its main line. The damage to some railways was so severe that up to three weeks of temporary repairs were needed, after the subsidence of the flood waters, to make these lines safe.

New Station at Burlington

On January 20 last, the passenger station of the Chicago, Burlington & Quincy Railroad at Burlington, Iowa, was destroyed by fire. An application to the War Production Board for permission to purchase materials to build a station, at a cost of \$300,000, has been granted, and construction is beginning forthwith on approximately the old site. The station will be a two-storey structure, 228 ft. long by 50 ft. wide, of modern reinforced-concrete, with large windows. The main waiting room, 50 ft. by 75 ft., will extend the height of the building at the north end; and the second floor at the south end will accommodate offices for the operating department. The work will include new platforms and platform roofing; approach roads with a canopy on the outside of the building, and parking space; and landscape gardening in front of the station building.

New Locomotives

An order has been placed by the Chesapeake & Ohio Railway with the Lima Locomotive Works for ten steam articulated locomotives of the Mallet type, to cost approximately \$2,750,000, and to be delivered in the first quarter of 1944. This will bring to a total of 30 the engines of this type now in service, the first 20 of which were brought into use in 1941 and 1942. The new engines are intended for the haulage of heavy-freight traffic over the 80-mile mountain section of the main line between Clifton Forge, Virginia, and Hinton, West Virginia.

ARGENTINA

Coal Supplies

According to information from official sources, negotiations for the formation of an Argentine-Venezuelan trade corporation to arrange for the import of Venezuelan coal by Argentina, mention of which was made at page 405 of the April 16 issue of *The Railway Gazette*, in exchange for local products required by the former, will be concluded shortly. Negotiations were opened on the basis of the import of 4,000 tons of coal every two months, shipped by steamers belonging to the Argentine State Mercantile Marine calling at Venezuelan ports on their return from the United States, the quantity of coal to be increased if extra steamers were available. The negotiations were retarded by the fears of the Venezuelan mine-owners that, at the end of the war, the Argentine Government might resume its coal pur-

chases from Great Britain, and that the mining companies, which might have invested additional capital for the purpose of augmenting output, would be faced with a loss. It is stated that this difficulty has been overcome by the formation of the trade corporation mentioned, which will provide the necessary capital and endeavour to open up Venezuelan markets to Argentine products.

The Buenos Aires Underground

With a view to the absorption of the Compañía Hispano-Argentina de Obras Publicas y Finanzas (the C.H.A.D.O.P.Y.F.) into the City of Buenos Aires Transport Corporation, the Argentine Government has issued a Decree, assessing the capital of the company at 96,470,976 pesos, which sum includes the value of the railway from Plaza Constitucion to Boedo, which is completed but is not yet in operation. The Decree states that this amount will be paid to the shareholders of the company in ordinary stock of the Buenos Aires Transport Corporation, in accordance with the agreements made between the two concerns, and will be the only payment for all properties, rights, and concessions. The Government has approved the transfer of the contracts covering the purchase of 10 coaches and 3 motor coaches, signed by the C.H.A.D.O.P.Y.F. with the Compañía Platense de Electricidad Siemens Schuckert S.A., which have not yet been delivered, and have not been included in the C.H.A.D.O.P.Y.F. assets. The Spanish company originally fixed its assets at 105,759,766 pesos, but the control board, in making its estimate, reduced this sum by 32,241,572 pesos, with a further reduction of 7,821,995 pesos for works planned but not executed. After a series of claims and counter-claims, in the course of which C.H.A.D.O.P.Y.F. claimed 35,168,414 pesos in respect of compensation, the company finally raised the valuation of its property and concessions to 145,294,939 pesos, which has now been reduced to 96,470,976 pesos (see editorial note, page 123).

FRANCE

New Metro Line

The new line of the Paris Underground, connecting the Gare du Nord with the north-eastern suburb of Pantin, a distance of about 3½ miles (actually 5.35 km.), which was opened to traffic on October 12, 1942, was built under an agreement made between the Metro Company and the Paris Municipality as far back as July 30, 1934. The line begins at the terminal station of the No. 5 line (Etoile to Place d'Italie and Gare du Nord), under the main Gare du Nord, and runs in a north-easterly direction below the rue Lafayette, rue du Faubourg St. Denis, rue Perdonnet, boulevard de la Chapelle, boulevard de la Villette, and the whole length of avenue Jean Jaurès. The "metropolitan" section of the line ends under the avenue de la Porte de Pantin, 3.48 km. from the Gare du Nord. The suburban extension (beyond the line of old fortifications) continues straight on in the same direction beneath the rue de Paris, and ends at Pantin Church; it is 1.87 km. long.

There are six stations on the "metropolitan" section, namely:—

Gare du Nord, the junction station with the No. 4 line (Porte d'Orléans to Odéon, Gare du Nord, and Porte de Clignancourt) and with the main-line Nord terminus of the French National Railways; Rue d'Aubervilliers, the junction station with No. 2 line (Place de la Nation to Aubervilliers, Etoile, and Place Dauphine), and with No. 7 bis line (Porte d'Ivry to Opéra, Gare de l'Est, Aubervilliers, and Porte de la Villette);

Avenue Jean Jaurès, the junction station with the same No. 2 line and with the No. 7 line (Porte d'Ivry to Opéra, Gare de l'Est, Place des Fêtes, and Pré St. Gervais);
Avenue de Laumière;
Rue de l'Ourcq; and
Porte de Pantin.

The suburban extension has two stations, namely, Rue Roche and Eglise de Pantin.

Constructional Features

The reconstructed Gare du Nord underground station is now somewhat deeper than the former terminus of the No. 5 line, with railhead 39 ft. 4½ in. below the surface of the Faubourg St. Denis. Also, the station extends over the whole width of that thoroughfare. The new location facilitates crossing under the Eastern Railway, nearby as well as under the Canal de l'Ourcq. Work under the canal was undertaken when the latter had been drained for cleansing. By means of continuous night and day working, and the use of quick-setting aluminous

cement, the tunnel under the canal was completed in 40 days.

The construction of the cover of the Porte de Pantin Station necessitated interference with the main telegraph and telephone cables connecting Paris with the eastern provinces. As the Telegraph & Telephone Administration opposed any interruption of its services, the cables had to be lifted above the structure concerned for a considerable length, an extremely delicate operation which was achieved without the slightest hitch.

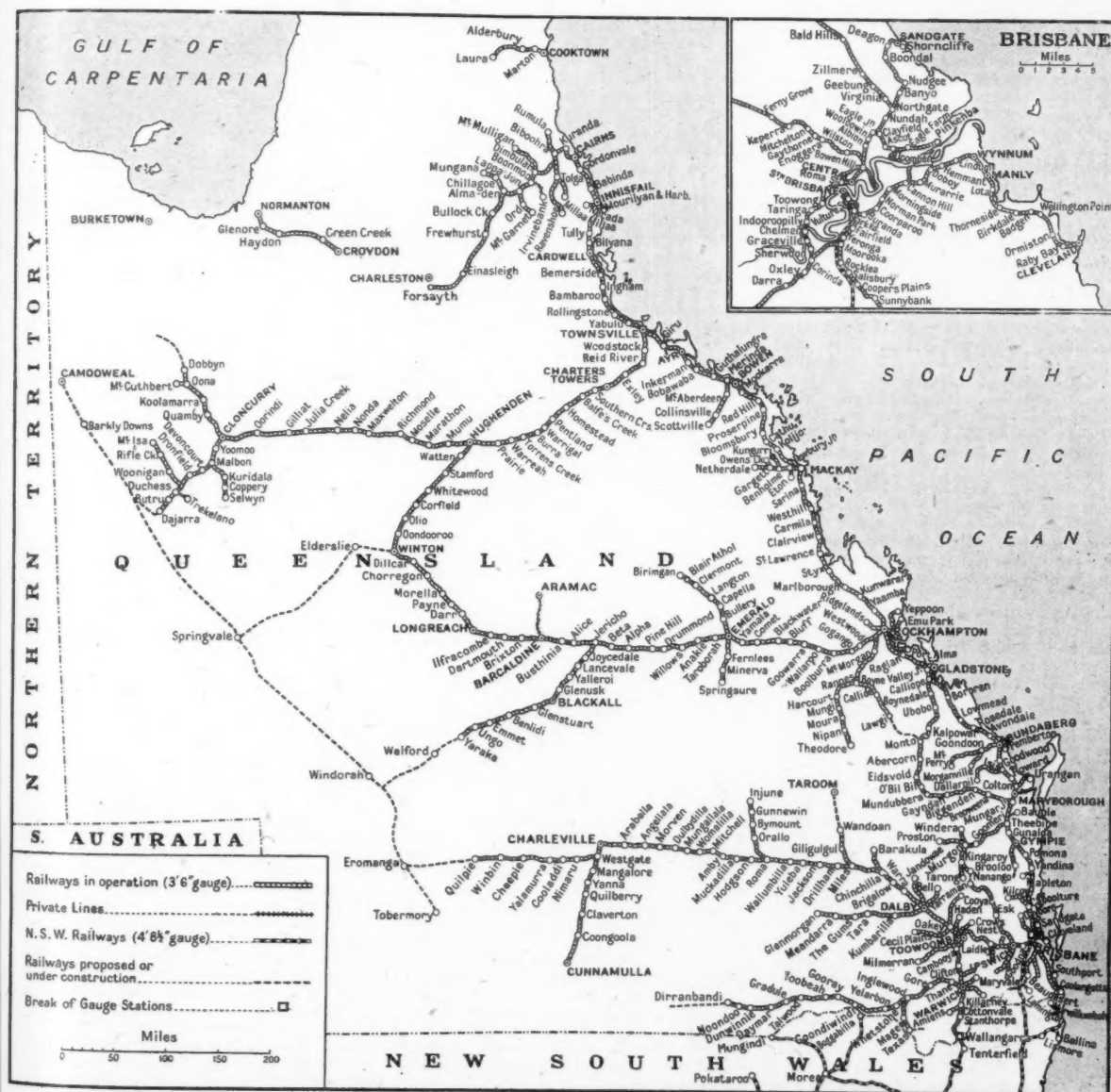
At its far end, between the Rue du Canal and Rue Ernest Renan, a distance of 312 metres, the new line has two service tracks as well as the two running lines.

Service Reorganisation

The opening of the line entailed a reorganisation of the services on the Nos. 5 and 6 lines. Formerly the eastern terminus of the No. 5 line (Etoile to Place

d'Italie and Bastille) was at the Gare du Nord. Trains of the No. 5 line now operate as far as Eglise de Pantin. On the other hand, these trains now have their southern terminus at Place d'Italie. The Etoile to Gare Montparnasse and Place d'Italie section is now operated by trains of the No. 6 line, formerly limited to the portion between Place d'Italie, Daumesnil, and Place de la Nation.

A map showing the various proposed extensions of the Paris Metro system, including that to Eglise de Pantin, was published at page 518 of our issue of September 28, 1934. Our most recent map of the Paris Metro, not indicating lines then unfinished but showing the routes at that time in operation, was included at page 839 in our issue of November 12, 1937. The latter is still substantially correct, apart from wartime suspensions of services, and the one or two new sections of line that have been opened subsequently.



The railway system of Queensland, showing the important lines proposed or under construction. The standard-gauge railway from New South Wales through to South Brisbane will be noticed

Rail Corrugations

Methods by which this defect has been minimised on the Queensland Government Railways

By J. H. Burgess, A.M.I.E.Aust.,
Bridge Engineer, Queensland Government Railways

AS a result of imposed forces the surface of railway rails suffers deterioration and finally breaks down with resultant flow or creep of metal into ripples or corrugations which give rise to roaring and rough-riding rails respectively. The rail surface is crumpled and indented by excessive pressure, regularly or irregularly according to the homogeneity of the rail steel. The fewer the passes made in rolling a rail from the ingot and the more coarsely crystalline the metallurgical product the more irregular will be the finished rail in distribution of chemical constituents, size of grain, and hardness and toughness of metal.

No rail can stand up to the forces generally imposed on it without suffering some distortion of the steel surface. In some cases the rolling stock is more injurious than the heavier locomotive, because the wheels are so small in diameter that the lesser total load gives a greater unit distress than the larger and greater loaded locomotive wheels.

A contributing feature is the curved top of the rails. Some are rolled with a 9-in. cross radius and others with 12- or 14-in. radius. These rails will be deformed by the first loaded wheel that rolls over them. This starts the unevenness and the structure of the rail steel determines the subsequent sizes and shapes of the rail tops. It would be preferable to roll the rails flat across the top and wheels are better cylindrical than coned; also tyres should not be allowed to wear so that they are hollowed sufficiently to give almost point contact.

These severe stresses and those caused by spinning of wheels when slipping and when very high speeds and hammer blows from locomotive drivers result, cause burns and defects in the surface skin. On easy curves where high speed is run, intense pressure on the high rail from hammer blow and increase of load due to swing by centrifugal force cause the rail to be speedily corrugated on top and sometimes kinked right through. On sharp curves the speed is lower and the wheel load on the high rail is carried by the side and top of the head, thus spreading the load and decreasing the stress intensity. On sharp curves more planing of the rail top by the sliding wheels also smooths out and hardens the surface. The easy edge curve to which rails are now rolled makes the gauge actually slack and permits a lot of hunting with consequent planing or grinding of the rail top.

The existing rail joints always give trouble. The blows here generally push the steel aside and a hollow is formed gradually within 3 in. to 6 in. of the end of the rail which extends slowly along the rail, finally causing the whole surface to be waved. Stresses due to pressure of one elastic solid on another were investigated by the Engineering Experiment Station of the University of Illinois and published in Bulletin No. 212.

The stress per sq. in. on the surface of a rail caused by a 33-ton wagon with eight wheels of 2 ft. 2 in. dia. on a width of 2 in. is 19 tons per sq. in. Lurching

will increase this, and rail joint stress may increase this as much as 7 tons per sq. in. This will deform the rail surface; the coned rail top will definitely be deformed at the top. These remarks refer to ordinary carbon rails firmly supported.

On the Queensland Government Railways the wheels of vehicles are cylindrical and the rails are set vertical with a gauge of 3 ft. 6 in. The wagons and carriages are nearly as wide as those for the standard 4 ft. 8½ in. gauge as the latter gauge is throttled by old structure clearances and double track centres.

Corrugation developed to a very large extent in Queensland but it has been greatly reduced. The correction of rail-joint dip, closing in of joint sleepers, and provision of clean elastic stone or gravel ballast has made an even top and a springy rail which has reduced the wheel-rail contact stress so much that rail rippling and corrugation is no longer a major problem.

The greatest cause of overstress is the solidity of the rail bed which reduces tremendously the depression of the rail under wheel press and thus increases the local intensity of the stress. Other causes are open and dipped rail joints, easily deflected rail ends at joints, pumping sleepers, and track out of gauge and level. The metallurgical treatment of the rail steel, rolling and work effect when shaping, finished shape of the head, and chemical constituents of the metal, are very important. Higher strength rails such as sorbitic or chromium-steel rails oven-cooled will reduce the defects considerably. Long rails assist. There should be sufficient ballast to give an even bearing on the sub-grade. Elasticity of the whole track is most important and here sleeper spacing with depth of rail is to be considered for correct proportioning.

With reference to coned wheels on railway stock running on rails, canted at 1 in 20 slope inwards, it is claimed that this tends to centre the train. Actually, the wheels tend to work towards the centre of the track or low side of the rail but as the track cannot be kept level, on a length with side slope this movement starts and one wheel slides across the rail head and the other climbs the rail on the lower side of the track until the greater circumference or diameter of the tread arrests this climbing movement and curve action takes place. Then, as the track levels up, as it will do, the slide is opposite in direction until resistance builds up again and arrests this sliding and gravity again restores the opposite motion.

The unevenness of wheel-tread diameters in the various vehicles and wheels of a train must cause unsteady travelling and induce forces that set up the sinuous motions of the vehicles. This must have a great wearing effect on the rail head and on the wheels and, in addition, the various slippings inevitably necessary to keep them straight and at right angles to the vehicle must wear rails and parts of the rolling stock.

With cylindrically treaded wheels and upright rails there is no force of gravity on level track except vertical to rail top

and it is not so great on slightly canted track. Curve action must take place with unlevel track and also hunting, hence play should not be great and with the easy-curved rail profiles of the present time the gauge might be tightened ¼ in.

The righting forces are greater on level rail with cylindrical wheels as there are no gravity component forces as in the 1 in 20 canted track and no variable speed of coned treaded wheels. It will be evident that great attention must be paid to rail design and manufacture, rolling stock design, and rail track design and maintenance.

In connection with rail wear and abrasion it has been observed with manganese-steel rails with 12 to 14 per cent. manganese that the steel toughens and hardens under cold working. This is a special quality of this steel. Under a certain stress per sq. in. the manganese steel will be abraded away but if the stress is not too great a hardening will be built up until an equilibrium is reached and no more wear will result.

TELEPHONE DIRECTORIES FOR SALVAGE.

—The Post Office asks business subscribers to see that their old telephone directories are sent for salvage when they receive the new A to K edition now being distributed. Wherever practicable, the Post Office will collect the old books; but shortage of labour makes this impossible in many cases.

UNDERGROUND RAILWAY FOR VALENCIA.

—In connection with the plan for an underground railway for Valencia, the Compañía de Tranvías y Ferrocarriles de Valencia has announced that it hopes to obtain the concession in the course of the present year, according to the Official German News Agency. The company, which paid a 10 per cent. dividend for the last business year in the form of shares to the value of three million pesetas, now plans a further increase in capital by 11 to 44 million pesetas.

L.P.T.B. EXTENSION OF TIME APPLICATION.

—The London Passenger Transport Board is applying to the Minister of War Transport for an Order under the Special Enactments (Extension of Time) Act, 1940, extending by three years the time now limited by Section 22 of the London Passenger Transport Act, 1938, and S.R. & O. 1940, No. 1999, for the compulsory purchase of lands, etc., and for the completion of works, namely:—(1) works authorised by Section 12 of the Act of 1938; (2) lands in Holborn and St. Pancras authorised to be acquired by Section 6 of the London Electric, Metropolitan District, Central London and City & South London Railway Companies Act, 1930, for the purposes of a subway and work; lands authorised to be acquired by Section 5 of the London Electric, Metropolitan District and Central London Railway Companies Works Act, 1931, for the purposes of Railways 1, 2, and 3 and a subway described in that Act; lands required for work No. 4 described in Section 45 of the London Electric, Metropolitan District and City & South London Railway Companies Act, 1931; lands in Islington, Kensington, Hendon, Harrow, Elstree, and Amersham required for Works Nos. 1, 2, 3, 6, 7, 8, and 8A authorised by the London Passenger Transport Act, 1937; (3) lands required for improvements at and access to Russell Square Station; and lands required for improvements at Gloucester Road Station.

Railway Coaling Plants—III*

A detailed survey of the principles and installations involved in fuelling locomotives

By J. Dalziel, formerly Assistant Electrical Engineer, L.M.S.R.

IN the early types of plant, unless the hoppers were kept full, the coal fell a considerable height on discharge and heavy breakage resulted, despite the provision of baffles and checks of various forms. There was the further necessity of preventing as far as possible the segregation of large from small coal so as to ensure uniform quality and obviate the possibility of some important engine being almost entirely filled up with fines and being unable to perform its work. Various hopper shapes were tried and apparently the London & North Eastern Railway finds in its concrete hoppers a flat bottom to be the most successful in both respects,

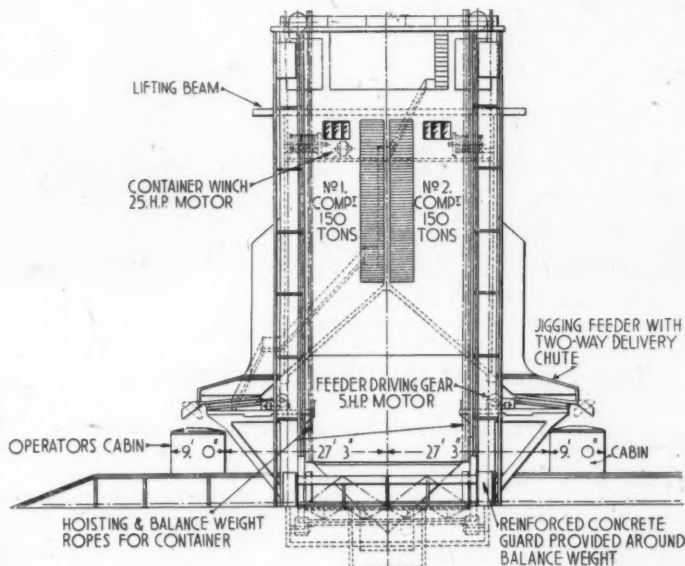
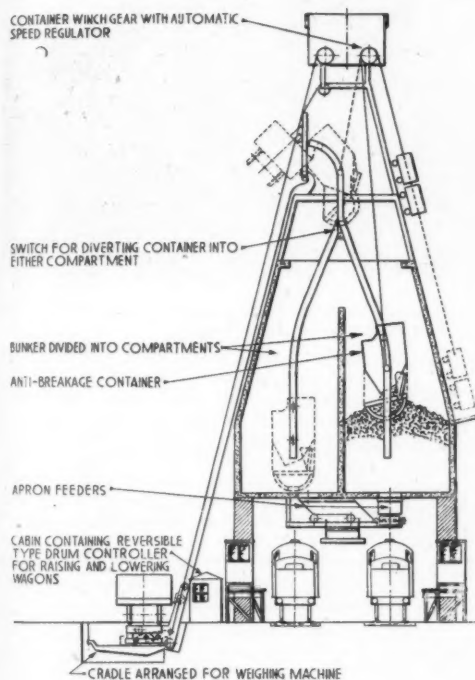
chutes controlled by upward closing flap valves without means for measuring the quantity supplied; the coal was then of medium or small size. Later, the coal was collected into "chute compartments" of known capacity, each fitted with cut-off valves top and bottom, so making the discharge from a chute that of a known quantity of coal.

Valves and Feeder Devices

At a later stage difficulty developed with this type of chute, more particularly with the cut-off valves which could not close against large pieces of coal. In modern practice the coal is fed out by means of

of coaling plants. In this plant, which is illustrated, the coal is side tipped from the wagon into a container; the tipper and container are relatively arranged and operated to minimise any clear drop of the coal. The coal is stored in hoppers overhead and the container, when filled from the wagon, is elevated up the side of the hoppers, at a slight angle to the vertical. Down this side of the hopper two slots are cut, each of which is sealed by a species of roller-blind shutter with an opening cut in it. Corresponding to the position of this opening in the sealing shutters there are discharge doors in the elevating container at the bottom and at the appropriate side. The opening in the sealing blind is raised as the coal level in the hopper gets higher, and the doors of the container are arranged to open when they reach these openings, discharging the contents of the container on to the coal already present, without drop.

When the container has been emptied the opening is closed by the sealing shutter



Above: The plant at Rugby, one of the most modern in the country

Left: A plant installed at York, in which the anti-breakage container is clearly shown

The flat bottom ensures that some coal always remains in the hopper so that incoming coal always falls on coal.

In a further development the hoppers are fitted with internal containers which receive the coal from the wagons or skips and then are lowered by gravity on to the coal at the bottom of the hopper. A bottom door opens and discharges the container on its touching the bottom or reaching the level of the coal already in the hopper; the container then returns by gravity under the action of counterbalance weights to the top of the hopper ready for the next wagon-load. Most of the more recent plants installed employ this device in some form or another. It is shown in a diagram illustrating a plant by the Mitchell Engineering Company installed at York. An improvement on this is embodied in a plant at Rugby. This is perhaps the most modern plant so far erected even though some plants have been put down later.

In early plants delivery took place from

* Part I was published in our July 9 issue and Part II in our July 23 issue

feeders drawing from the hoppers, which are shaped down towards them. These may be of a special rotary-plate type, as at Willesden, but are more often of the jigger or apron-feeder type. Jigger feeders can be arranged so that with fairly accurate approximation each delivery stroke of the feeder draws out and delivers a known quantity, which can be totalled by recording the number of strokes of the jigger. Where apron feeders are used, weighing has to be done, by delivery through compartment chutes or by counterbalanced boxes as described in connection with skip hoists.

Mechanisms also exist by which the amount of coal passing over a selected length of belt or feeder is measured and recorded, but this method of weighing, though probably capable of being made sufficiently accurate, appears to be regarded with a certain amount of distrust among operating engineers generally.

The Plant at Rugby

The Rugby installation, in the writer's view, embodies the most modern features

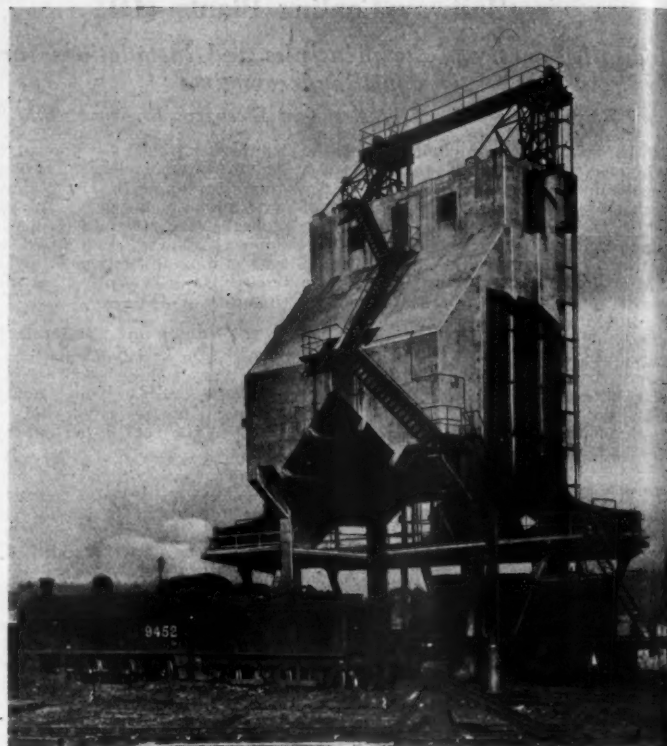
and the discharge doors of the container or skip are also closed; the skip then descends to the bottom for refilling. The plant is also remarkable for its discharge arrangements and for the anti-breakage devices embodied therewith; this was the first plant in which they were employed. Discharge takes place from a number of vertical chutes external to the main hoppers and fed therefrom through slots cutting the main hopper walls. It is found that the coal from the main hoppers flows into these chutes always from the top; the chutes themselves remain full to the level of the coal inside the hopper, so that no drop takes place between the main chute and the hopper. A further effect of feeding the outlet chutes in this way is to relieve the coal passing out to the chutes from most of the weight of super-incumbent coal that has to be borne when the feed is direct from the hopper itself. This weight is so great that the movement of the coal can only take place at the expense of its being heavily crushed as it passes through the discharge opening. There is, therefore, in

the Rugby plant a great reduction in breakage.

In this plant there are four outlet points feeding to tenders; two of these are fitted with jigger feeders and two with apron-plate feeders. So far as the writer is aware, this was to afford comparative trials of the two types of feeder. The writer does not know whether one type has shown any superiority over the other. In his view, the jigger feeder, though possibly more positive in action and more capable of breaking down a jam due, say, to two pieces of large coal coming together in the throat leading to the feeder, causes more disturbance of the coal and is more liable to produce breakage; on the other hand, the recording of the quantity of coal passing through the feeder is simpler with this type.

There has been a number of later plants than that at Rugby; these have mainly used the separate lowering container inside the hopper already described and not the external container discharging at coal level. On the discharge side they have used the slot-fed outside vertical chute as is in use at Rugby.

(Concluded)



Right: New locomotive cooling plant at Rugby

The Future of the Wartime Engineering Student

His vital role in post-war reconstruction

UNLESS the country is to suffer a serious decline in the national standard of living after the war, the technical ability of engineers trained in Great Britain must be put forward, virtually as a marketable commodity, which we must export in return for the raw materials and manufactured goods of other lands. As one of this country's chief industries, engineering must be able to claim its share of attention when it is eventually realised that it is a matter of paramount importance to ensure the highest efficiency of the personnel of every trade which contributes to the wealth of the nation. A long view of the future training of engineering students is thus highly desirable, bearing in mind that the industry should regard the training of its younger recruits as a long-term investment which will yield results in proportion to the amount of foresight and breadth of vision displayed in planning that training. The fundamental aims of the present war of liberation, as summarised in the Atlantic Charter, will involve a vast amount of post-war effort, in addition to the sacrifices demanded in the conflict today. In this great mobilisation of our technical resources, the student of today will play a vital part. With this in mind, it is of the utmost importance that the lessons of the period 1919-39 should be learned, so that the disappointments experienced (by engineers, in common with many others) in connection with trade expansion and professional opportunities, are not allowed to recur.

The present situation, the needs of the

future, and the opportunities which may be offered to those who are at present engineering students in universities and technical colleges, are concisely summed up by Mr. A. S. Quartermaine, M.C., B.Sc., M.Inst.C.E.*, Chief Engineer of the Great Western Railway. Mr. Quartermaine is a former student of the University College, London, and is a Vice-President of its Engineering Society. He refers to the chief post-war projects, in which quick and vigorous action by engineers is needed as:

Repairs to air raid damage and (in many cases) incidental opportunities for replanning.

Need for additional houses, to replace existing slum dwellings.

Roads to serve such new districts.

Railway facilities for new industrial and residential sites.

Extension of civil aviation.

Development of seaports.

New trunk roads.

Improved water and electricity supply, and sewerage schemes.

Completion of works postponed on account of the war.

The engineer, in fact, will be in the forefront of national progress. Great technical developments have been made during the war, and students may therefore expect an increased demand for re-

search work in every sphere of engineering. Young engineers will have great opportunities for work and experience. Something more than mere technical ability is needed, for they will be building the foundations of a better country and an improved standard of society. Engineers must therefore appreciate the part they will play, not only in designing new works, but also in organising their execution in a way which will give proper consideration to the welfare of those engaged upon them.

It is a good sign, in this connection, that Government and local educational authorities, professional engineering institutions, universities, heads of technical colleges, and teachers recently should have devoted much-increased attention to the future of engineering education and training. The Institution of Civil Engineers, for instance, set up a Special Committee in September, 1941, under the chairmanship of Professor Ingis, which issued in 1942 a Memorandum dealing with the past and future education of civil engineers. This Memorandum was given wide publicity, and was discussed at a supplementary meeting at the Institution on March 30, 1943. The Committee are considering all the comments which they received with a view to preparing a report on their findings. The Institutions of Mechanical and Electrical Engineers respectively are also giving the question of education and training close consideration at the present time. It is clear, therefore, that the three senior institutions regard the question of education as of great importance and are fully alive to the necessity for developing and improving the education and training of engineers in the post-war years.

*In an article which appears in the *Journal* of the Engineering Society of University College, London, (March, 1943, p. 28)

Narrow-Gauge Wood-Burning Locomotives for Africa

With a maximum axle weight of under 8 tons the hauling capacity over a steeply-graded line is nearly 300 tons

THE Vicicongo Railway has a gauge of 1 ft. 11½ in. which is widened on curves by a further ½ in.; the minimum radius of the main-line curves is 656 ft., of branch-line curves 164 ft.; and the maximum gradient is 1 in 66½. Locomotives recently built by W. G. Bagnall Limited for operation on this railway have the 2-8-2 wheel arrangement which gives the low maximum axle weight of 7-87 tons yet permits the development of a tractive effort, calculated at 75 per cent. boiler pressure, of approximately 15,000 lb. The boiler is suitably proportioned for operation with wood fuel, the calorific value of which is only about

distance between water intake points which is 18-63 miles.

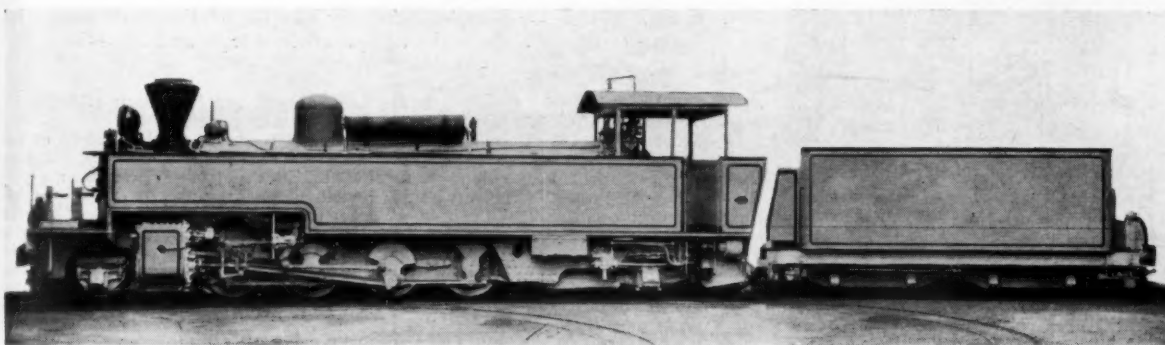
Main Particulars

Some dimensions of the engine and tender are shown in the accompanying diagram and in the following table:—

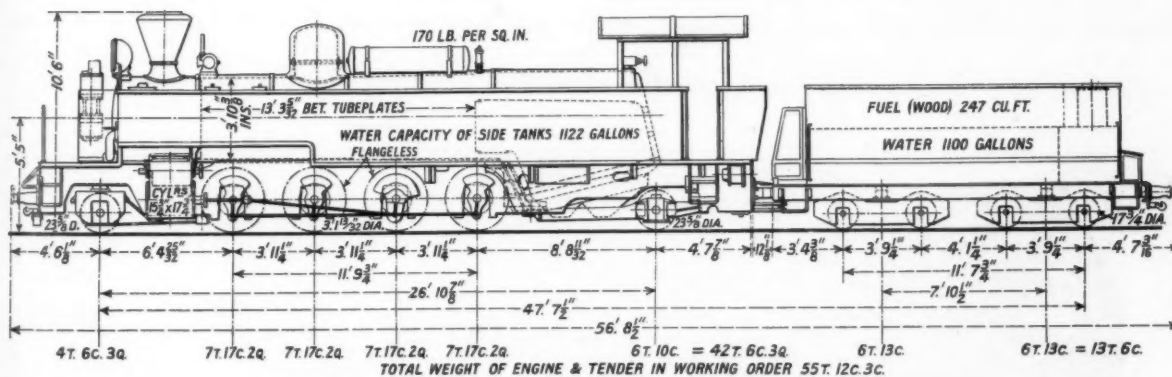
Cylinders (2), dia....	15½ in.
" stroke	17½ in.
Coupled wheels, dia.	3 ft. 1½ in.
Evaporative heating surface, tubes	870 sq. ft.
" " " firebox	98 sq. ft.
" " " total	968 sq. ft.
Firegrate area	24.2 sq. ft.
Boiler pressure, per sq. in.	170 lb.
Tractive effort (at 75 per cent. boiler pressure)	14,991 lb.
Adhesion weight	31½ tons

bushes are provided in the coupling rods; and also for all valve-motion trunnions and pins. The bushes in the coupling rods are white-metal lined. All moving parts of the motion and rods have needle lubrication.

The boiler is provided with an unusually large inner firebox of steel plate which is connected to the outer shell by mild-steel stays; the first two rows are of a kind to permit expansion. The grate consists of straight cast-iron firebars; it is not of the drop variety but fixed. The weldless steel firetubes, 160 in number, are of 1½ in. outside dia. Fittings include two Ross pop muffled safety valves of 2½ in. dia., and two hot-water injectors of the automatic re-starting type, which are fixed below the platforms. These are connected by copper pipes to combination steam and delivery valves on the back of the firebox. Two



British-built narrow-gauge 2-8-2 wood-burning locomotive for the Vicicongo Railway



Principal dimensions and weights of the new British-built narrow-gauge 2-8-2 wood-burning locomotives destined for service on the Vicicongo Railway in Central Africa

7,940 B.Th.U. per lb. A spark arrester is built into the chimney. The maximum speed of the locomotive is 28 m.p.h. and the hauling capacity, exclusive of its own weight, is from 246 to 294 tons according to the actual operating speed. To meet tropical conditions, the locomotive is provided with a cab having a double roof the inner lining of which is of oak ½ in. thick. Side tanks are provided on the engine to increase the weight available on the four coupled axles and permit more tender space to be allocated to the storage of wood, which is a more bulky fuel than coal. Water amounting to 2,223 gal. is carried by the engine and tender; of this 1,122 gal. is carried in the engine side tanks. The supply is ample to cover the greatest

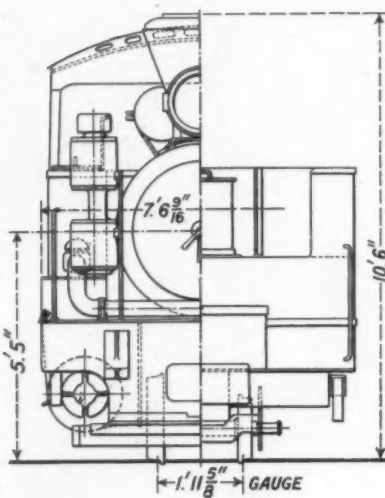
The engine uses saturated steam and is provided with flat slide valves actuated by Walschaerts valve gear. A lever and sector reversing gear is provided on the right-hand side of the cab. Cylinder lubrication, including that of the slide valves, is provided by large capacity Wakefield Eureka type "H" condensation lubricators with sight-feed glasses and means for locking at the correct setting. A large transfer filler serves to increase the total oil capacity of the lubricator to four litres. The piston rods and valve spindles are equipped with "Walkers Expanding Grease" packings. The crossheads are provided with bronze slippers and the connecting rods with bronze bushes having white-metal inserts. Cast-iron

sets of water-gauge columns with glass protectors are provided.

The two feed-water pipes to the injectors are arranged with gunmetal two-way cocks, so that the injectors feed first from the tender tank until it is empty, and then, by reversing the cocks from the engine side tanks. As the weight of the water in the engine side tanks is required for adhesion, the feed is taken from them only when the conditions of the railway necessitate using this water to get the train to the next watering station. The tender tank is of the horse-shoe shape, built of steel plates, with fuel carried in the well and on top of the tank.

The underframe is of the plate variety; its side members are braced by the cylin-

der block (which also carries the front end of the boiler and smokebox), by stretchers of mild-steel plates and steel castings. The hind pair of frames is jointed to the front pair of frames by joint castings of steel, which also carry the firebox, and by drawbox steel castings, and buffer beams at the front and rear ends. The coupled axleboxes are of bronze with anti-friction white-metal inserts. The front and rear Bissel truck



Part front end view of engine, and part rear view of tender, showing unusually generous dimensions for the narrow gauge



Sketch map showing the Vicongo Railway and its relation to the lines of communication between the valleys of the Congo and the Nile

axleboxes are of steel castings with bronze bearings. All axleboxes are fitted with "Armstrong Oiler" pads. The two intermediate pairs of coupled wheels have tyres without flanges. The engine is provided with two 20-ton lifting and traversing jacks, and a derailing beam is fitted at the front end of the engine; brackets are fitted to the ends of the frame to suit the lifting jacks in case of derailment.

The tender frame is built up from steel channel sections, with cross channel and angle braces stiffened by steel gusset plates. The bogie frames are of the plate type, with cross centre and end channels,

and angle diagonal bracings stiffened by gusset corner plates.

The drawgear is to the designs of the Société des Chemins de fer Vicinaux Belges. Both engine and tender are provided with screw-operated hand brakes and the engine has also a Westinghouse air brake. Lambert wet sanding gear is fitted; the sand reservoirs are placed inside the water tanks. Stone's system of electric lighting provides for a 250-watt headlight and 15-watt lamps in the cab; also a hand inspection lamp with 25 ft. of flexible cable. A 32-V. 500-watt turbo-generator supplies the necessary current.

A Record Load on the Canadian National Railways



The largest single-unit freight shipment ever carried over the Canadian National Railways, and exceeding any known previous record established by lines in North America, travelling on the double-track main-line from Lachine to a destination in south-western Ontario

The great tank, known as a "B.B. Extractor," and manufactured by the Dominion Bridge Company, is a war job for a synthetic rubber plant. It weighs 150 tons, is more than 165 ft. long, 12½ ft. wide, and 16½ ft. above the top of the track rail

RAILWAY NEWS SECTION

PERSONAL

Mr. R. A. Riddles, C.B.E., M.I.Mech.E., M.I.Loco.E., has been released by the Ministry of Supply from his post as Deputy Director-General, Royal Engineer Equipment, at the request of the L.M.S.R. He is succeeded by Mr. R. A. Davis, M.B.E., formerly Deputy Director-General with the Ministry of Supply Mission in Washington. Mr. Riddles will continue for the time being to be available to advise Mr. Davis on questions of locomotive design.

L.M.S.R. APPOINTMENTS

The L.M.S.R. announces the following appointments:—

Mr. Robert A. Riddles, C.B.E., Mechanical & Electrical Engineer (Scotland), who since the beginning of the war has been Deputy Director-General for Royal Engineer Equipment at the Ministry of Supply, to be Chief Stores Superintendent in place of Mr. S. J. Symes, who will retire on October 31.

Captain W. L. Sinclair to be Chief Marine Superintendent, in place of Captain J. W. Harris, R.N.R., Marine Manager, who retired on July 31.

The Earl of Clarendon, K.G., Lord Chamberlain, has been elected Chairman of Council of the Royal Empire Society in place of General Sir Alexander Godley. Lord Clarendon was from 1925 to 1927 Parliamentary Under-Secretary of State for Dominion Affairs.

We regret to record the death, at the comparatively early age of 57, of Mr. R. N. Appleby Miller. He was a member of the staff of the Newcastle Central Library and a Fellow of the Library Association. Although not an engineer by training or profession, he made a keen study of certain aspects of early engineering history. His studies of locomotive history were well known, and have appeared in many publications. Perhaps his most outstanding discovery was a hitherto unpublished sketch representing a very early George Stephenson locomotive, which he included in his article on a "Link in the History of the Locomotive" published in *The Engineer* of September 18, 1931.

PRESENTATION TO SIR CHARLES NEWTON

On the occasion of recent meetings in London the principal Officers of the London & North Eastern Railway Company took the opportunity of offering to the Chief General Manager, Sir Charles Henry Newton, a piece of silver, suitably inscribed, as a memento of the honour of Knighthood recently conferred upon him by His Majesty.

The Secretary of the company, Mr. W. H. Johnson, occupied the chair, and on behalf of the Officers made the presentation to Sir Charles, together with a suitably inscribed address. Mr. C. M. Jenkin Jones, Divisional General Manager, North Eastern Area, and Mr. L. C. Glenister, Chief Accountant, proposed and supported respectively the toast of Sir Charles Newton. Sir Charles Newton replied to the toast and the presentation in appropriate terms, after which Mr. George Mills, Divisional General Manager, Southern Area, proposed the toast of the Chairman.

Other guests present were Sir Ronald W. Matthews and Sir Murrough J. Wilson.

Mr. G. H. C. Wiltshire, who is retiring from the position of Chief Cashier, Great Western Railway, joined the service of the Taff Vale Railway in the Goods Manager's Office on March 27, 1893, where he remained for ten years, before being transferred to the Secretary's office in 1903. In 1914 he became Assistant Cashier of the Taff Vale



Mr. G. H. C. Wiltshire

Chief Cashier, G.W.R.,
1936-43

Railway. After the railway amalgamations in 1922, he was appointed District Cashier at Cardiff, G.W.R., a position he held until his promotion in 1932 to Paddington, as Chief Clerk to the Chief Cashier. Mr. Wiltshire was appointed Chief Cashier, Great Western Railway, in 1936.

Mr. W. A. Collis, Goods Agent, Stratford, retired from the service of the L.N.E.R. on July 31. Mr. Collis joined the service on October 24, 1900, and was appointed Goods Agent, Stratford, on July 17, 1939.

We regret to record the death on August 1 at the age of 73 of Mr. James Frederick Gee, Chief Accountant, L.M.S.R., from 1925 to 1929.

We regret to record the death on July 26, at the age of 88, of Mr. W. J. S. Cox, formerly Assistant Goods Manager, G.W.R. Mr. Cox joined the company in April, 1870, in the Carriage & Wagon Superintendent's Office at Paddington. In 1876 he was transferred to the Mineral Department of the Chief Goods Manager's Office, and in 1894 was promoted Principal Rates Clerk. In 1908 he became Chief Clerk, and in 1911 was appointed Assistant Goods Manager, which position he held up to the time of his retirement, under the age limit, in June, 1920.

We regret to record the death on June 9, at New Jersey, U.S.A., of G. R. Joughin, in his 89th year. Mr. Joughin was Superintendent of Rolling Stock for the Canadian Government Railway from 1914 to 1918. The C.G.R. was included in the Canadian National Railways in 1919.

Mr. A. C. B. Pickford, Assistant District Goods Manager, Swansea, G.W.R., who has been appointed District Goods Manager, Swansea, began his railway career at Cardiff in 1915. After experience at stations and district offices in South Wales, he was promoted to Paddington in the Chief Goods Manager's Staff Department in 1929. From



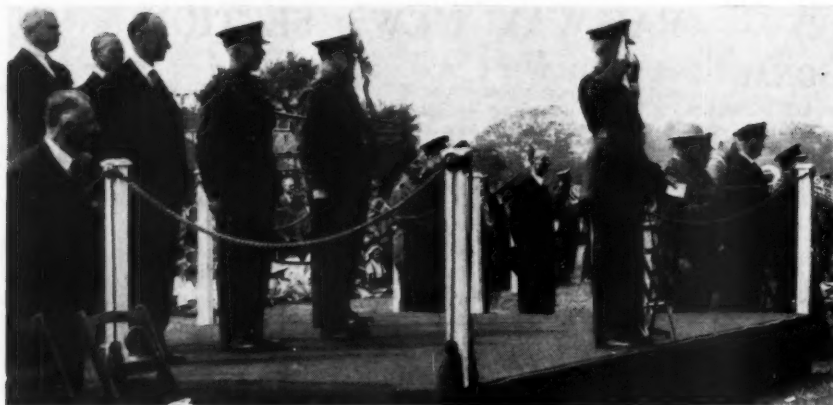
Mr. A. C. B. Pickford

Appointed District Goods Manager,
Swansea, G.W.R.

1930 to 1933 Mr. Pickford was engaged on outdoor investigations covering general organisation subjects, goods shed working, and bonus arrangements. He was the Goods Department representative on the G.W.R./L.M.S.R. Closer Working Investigating Committee. In 1933 he became personal clerk to the Chief Goods Manager, and in 1934 was appointed Goods Agent, Slough. Early in 1937 he returned to Paddington as Outdoor Representative, Rates Department, and subsequently took charge of the Research Section. He was appointed Rates Assistant (Research) in 1941, and up to the time of his transfer to Swansea as Assistant District Goods Manager early this year represented the G.W. Railway on the Inter-Company Freight Rolling Stock Control and the Railway Liaison Committees with the Ministry of Food and Ministry of Supply. Mr. Pickford gained several awards under the company's educational facilities, including first place in both railway law and railway economics at Cardiff Technical College. In 1927 he passed the final examination of the Institute of Transport, with a distinction. He is also a gold medallist of the G.W.R. London Lecture & Debating Society.

We regret to record the death, on July 16, of Mr. C. G. Saunders, Joint Managing Director of I.C.I. (Alkali) Limited.

Mr. A. J. White, of the Western Welsh Omnibus Co. Ltd., has been appointed General Manager of Hebble Motor Services Limited in succession to Mr. C. R. H. Wreathall, who becomes General Manager to East Yorkshire Motor Services Limited on September 1.



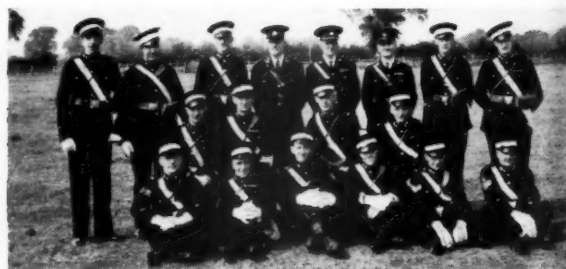
Lt-General Sir Arthur Smith, D.S.O., M.C., General Officer Commanding, London District, taking the salute at the march past



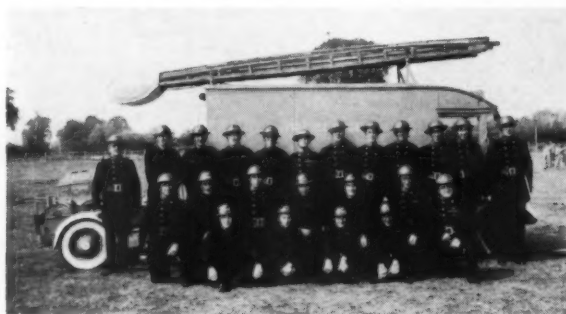
Inspecting the Guard of Honour



Reading Engineering Department, A.R.P.



G.W.R. St. John Ambulance Brigade



Paddington Fire Brigade



G.W.R. Police representatives

G.W.R. HOME GUARD AND CIVIL DEFENCE : INSPECTION AND PARADE OF LONDON DIVISION UNITS

(A report of the proceedings was given in our last week's issue on page 120)

TRANSPORT SERVICES AND THE WAR—201

London Station to be Closed

The L.N.E.R. has announced that Tidal Basin Station is to be closed on and from Sunday, August 15, for the duration of the war.

Staggering Hours

Fifty group committees, including representatives of industrial undertakings and the trade unions, are now co-operating with the passenger transport undertakings in the London area, to ensure suitable services for 500,000 war-workers.

Women Conductors in London

On July 24, three women conductors complete three years of service with the London Passenger Transport Board. They were the first women conductors in the London area to be engaged; all work on local routes in the Windsor neighbourhood. The first women conductors in the Central area began work on trams and trolleybuses in October, 1940. The first women on Central bus routes went into service on Armistice Day of the same year; there were 102 of them, and thereafter the numbers rose rapidly every month. Today, there are about 8,000 women conductors on all routes.

Road Transport Licences and Permits

To save time, manpower, and paper in the offices of the Ministry of War Transport and of road transport operators, the Minister has decided, as last year, to extend for twelve months from the date when it would otherwise have expired, any authority in force on July 31, 1943, to act as driver or conductor of a public service vehicle; act as driver or conductor of a tram, trolleybus, or hackney carriage in the Metropolitan Police District; use a public service vehicle; operate a road passenger service; and use a goods vehicle ("A," "B," or "C" licence). This is being effected by the Emergency Powers (Defence) Road Vehicles and Drivers Order, 1943, which came into force on July 31. The extension is automatic and without fee. Ordinary driving licences and excise licences are not affected.

The new Order replaces the corresponding Order of 1942 and the two subsequent amending Orders, and incorporates another minor amendment to enable Regional

Transport Commissioners to issue short-period defence permits for goods carriers for periods up to six months, instead of three months as previously.

Reichsbahn Personnel

The Reichsbahn personnel, including workmen, numbered 1,700,000 at the end of 1942. This total included more than 100,000 women and a considerable proportion of foreign labour. The average age of the personnel increased last year as a result of the younger and more vigorous members having had to join the Armed Forces.

German Locomotive Building

According to an official German announcement, the monthly target figure for locomotive output in Germany was reached for the first time in May last, the number of locomotives turned out in that month increasing by 25 per cent. This was made the occasion for Speer (Minister of Production), accompanied by Degenkolb (Supervisor of Locomotive Production) and Dr. Dörpmüller (Minister of Transport), to make an address in a locomotive works emphasising the importance of the achievement.

Baltic Railways

The administrations of the Estonian, Latvian, and Lithuanian railways, under German control, have been amalgamated with their supervising management, the German Reichsverkehrsdirektion of Riga, from May 1, to simplify administration.

Holders of travelling passes (*Durchlassscheine*) are now permitted to travel without the special "railway authorisation certificate" (*Eisenbahnberechtigungsschein*) formerly required for crossing by railway the frontiers of the Reichskommissariat Ostland (the joint appellation of Estonia, Latvia, and Lithuania under German rule) or adjoining areas on their way from or to Germany.

Polish Trams

Lodz trams were able to improve their financial results in 1942, compared with 1941 and 1940, by reason of unprecedented development of the traffic; 30 tramcars had to be taken over from other towns to enable the undertaking to cope with increased traffic. The Lodz tramway

system had a route length of 31 miles before the war. At the end of 1937, the undertaking owned 322 tramcars, of which 166 were trailers. Of the 11 Polish towns owning tram systems, Lodz ranked first after Warsaw. Since early in the occupation, the Germans have re-named the town Litzmannstadt.

Bulgarian Facilities Abolished

The issue of combined railway and shipping tickets at reduced rates, as well as of railway tickets at reduced fares for families with numerous children, was abolished in Bulgaria from April 15.

New Russe-Giurgiu Ferry Rates

New fares and rates were introduced on April 15 on the Danube ferry between Russe and Giurgiu. Passenger fares for adults are Leva 30, 23, and 15 for the first, second, and third class respectively. The luggage rate was increased from 2 to 3 Levas for each 1 kg. (2.2 lb.). The increases do not apply to Germans or Bulgarians, nor to German or Bulgarian consignments. Goods rates were also increased from the same date; the increases apply both to small consignments and to full wagon loads.

Seville Transport in 1942

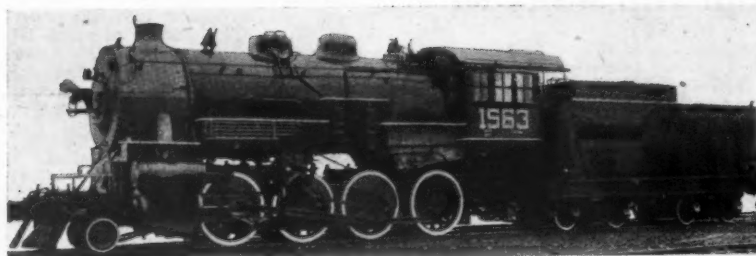
By reason of the shortage of other means of public transport, the Seville tram traffic increased substantially in 1942, according to the report of *Tranvías de Sevilla Sociedad Anónima*. The company's bus services were severely hit by lack of fuel, and were worked almost entirely by charcoal producer-gas buses. It was found that working expenditure with producer-gas was ten times higher than with heavy oil. The operation of the producer-plant buses resulted in a substantial loss.

The Attack on Rome

Rail transport targets provided the principal objectives when Rome received its first air raid, the daylight attack by U.S.A. aircraft on July 19, in which more than 500 bombers participated, with the loss of but five. The raid has been stated officially to have been most successful, both in the damage done to military objectives, and because very little civil property was touched, and this only to areas surrounding the main targets. Subsequent reconnaissance has shown that heavy damage was caused to the San



Three new pictorial posters of the Railway Executive Committee. The first and second were both designed by Bert Thomas and issued on behalf of the R.E.C. by the L.N.E.R. The third, designed by Kerr, was issued by the G.W.R.



One of seven reconditioned 2-8-0 type U.S.A. locomotives recently sent to Mexico under the Lease-Lend Programme

Lorenzo marshalling yards. These are at the point where various lines from the north, east, and south of Rome converge to enter the main (Termini) station. There was substantial destruction of tracks and railway property, including hits on both round houses, a large locomotive shop, wagon sheds at the north-eastern end, carriage shop, etc. A large freight depot was still burning in the evening of July 19. The raised viaduct was holed in two places at the western exit. There was also damage to industrial and other buildings south-west of the main target, and the Tabonelli steel plant and a tram depot were also affected. A large chemical plant was damaged, and several nearby craters pierced the water main, resulting in road flooding for some distance.

A separate target was the very much larger Littorio marshalling yards, to the north of the city just beyond Ponte Salario. Here some 50 hits were secured, and much rolling-stock was damaged and derailed. In the evening, ten fires were still burning, and the east side of the target was obscured by smoke. Direct hits were seen on the railway bridge and on a building east of the carriage shop. The locomotive depot was severely damaged. An ammunition train was seen to explode. Bursts were also seen in the southern part of the railway yards, and explosions and fires were caused. The entire area was left enveloped in smoke.

Texas Pipeline Opened

The position of motorists in the Eastern States of the U.S.A. will be eased considerably by the opening on July 19 of the 1,475-mile long oil pipeline which has been built from the Texas oilfields across nine states to Bayonne, N.J., and Philadelphia, Pa. The line, 24 in. in diameter, cost \$95,000,000 to build, and brings 12,600,000 gal. of petrol daily to the east coast refineries. The decision to build this line, and to supplement it later with a 20-in. one, was made when U-boat attacks were directed largely against tankers, and the fuel position became serious. The Petroleum War Industry Council has stated that it may soon be possible for Eastern States motorists to have as large a ration as the rest of the United States.

Rebuilding U.S.A. Locomotives for Mexico

Seven 34-year-old locomotives, which had been withdrawn from American railway service for several years, have been reconditioned and modernised in the works of the Chicago, Burlington & Quincy Railroad, and have been sent to Mexico to expedite the supply of war materials from that Republic to the Allied cause. These engines, of which one is illustrated, are of the 2-8-0 type, and were built about 1909 for the Chicago & North-Western Railway, upon which they worked for many years. Recently, they were acquired by the U.S.A.

Government, under the Lease-Lend programme, and the C.B. & Q.R.R. was asked to undertake the work of reconditioning; three were dealt with at the company's West Burlington (Iowa) Works, and four at those at Denver (Colorado). The locomotives have been converted from coal to oil burning, to accord with Mexican practice, and have been equipped with Baker valve gears, Franklin radial buffers, Edna injectors, etc. The locomotives have cylinders 25 in. \times 32 in.; a boiler pressure of 185 lb.; and tractive effort of 51,600 lb. The locomotive and tender in working order weigh 178 (English) tons 9 cwt. Special equipment carried on each locomotive, to meet the requirements of the Mexican railways, include one 25-ton and one 50-ton jack for re-railing purposes. These locomotives are already in the service of the National Railways of Mexico.

Transport in Free China

Although very considerable progress was made during the first decade after the last war in the development of railways and other means of communication in China, the long years of upheaval since then have resulted in the division of the system into three parts (Manchuria, Japanese-occupied China, and Free China), and the subsequent progress of these three systems as separate entities. Since the Japanese invasion of Manchuria in September, 1931, and the establishment of the puppet state of Manchukuo in February, 1932, the railways of Manchuria have been developed under the immediate auspices of Japan, and are outside the scope of the present notes.

China proper was attacked by Japan on July 7, 1937, at which time there were some 12,500 miles of railway in the country, including industrial lines, and about 5,250 miles in Manchuria. The Japanese succeeded in occupying most of the eastern provinces, containing the bulk of the railway mileage, and the Free China Government established itself at Chungking in the west. Both Japanese, China and Free China have built additional mileage to meet their war needs, and by January 1, 1940, the 7,270 miles south of Manchuria had grown to 9,120 miles, of which 8,534 miles were of the standard gauge of 4 ft. 8½ in., and 586 miles of metre gauge. Of this total Free China still holds 1,875 miles, and has undertaken the construction of substantial additional mileage in the western provinces, despite the difficulties incidental to war conditions. Some of these routes were indicated in the map we reproduced in our issue of November 7, 1941 (page 467). The principal new lines are:—

Kwangsi-Kweichow, extending from Liuchow (on the Hunan-Kwangsi Railway) to Kweiyang (capital of Kweichow), a distance of 390 miles through mountainous territory;

An extension of the Lunghai Railway from its old terminus at Paochi westwards

to Tienhsui, a distance of 105 miles, also through mountains.

Some earlier reference to this railway development in Free China was made in our issue of January 15, 1943 (page 74).

In addition to internal developments, the policy of the Free China Government during the six years of her present war against Japan has aimed at keeping open international supply routes. The success which has attended this two-fold effort is exemplified by the fact that, through outstanding efforts on the part of the railway personnel, even the inadequate railway system has supplied the battlefronts, and has removed persons, materials, and machinery from threatened zones in face of enemy bombing. Although Chinese communications have been constantly the main targets of Japanese land and air attack, they have consistently carried on with their work so long as they have remained uncaptured.

In a recent statement by Dr. Tseng Yang-fu, Minister of Communications, reviewing progress made by his department since 1937, it was pointed out that, despite the fact that supply routes between China and the outside world had fallen to the enemy one after another, China still maintains two outlets with the help of her Allies. One is by air from India, and the other is by land through Soviet Russia and Persia. Transport aircraft, and the amount of cargo they can carry, have been increased from time to time, and there can be little doubt that the air supply route will soon be strengthened still further.

Against a pre-war highway total of 68,750 miles in the whole of China, there are now in Free China 51,250 miles of motor highways, 3,750 miles of which have been constructed during the war. The main aim has been to improve links both between various provinces in the north-west and south-west and between the border provinces and neighbouring countries. In addition, much has been done to improve the standard of construction of important trunk highways, especially in regard to grading, curvatures, surfacing, and drainage. Among the most important of the highways constructed in wartime are the Yunnan-Burma (Burma Road) and Kwangsi-Indo-China routes, and the China-India road (the Assam Road). Most intensive improvement work has been carried out on roads in the provinces of Kansu and Sinkiang (Chinese Turkestan), on the route to Soviet Russia.

Use has been made of petrol substitute distilled from alcohol, wood-oil, or charcoal for normal trade purposes. To supplement the small number of motor vehicles available to China, man and animal power is used extensively for freight haulage, and there has been a considerable development of waterways and air routes.

Transport in Central China

For administrative purposes, the railways in the Japanese-occupied parts of China, south of the border of Manchuria, have been taken over by two companies (unofficially subsidiaries of the South Manchuria Railway) known as the North China and Central China Railways. They work in conjunction with the North China and Central China Transport Companies, formed on April 17, 1939. The Central China Railway system includes the Pengpu-Pukow section of the Tientsin-Pukow (Nanking) line; the Nanking-Shanghai; the Shanghai-Hangchow; and other lines. So far as is known, the total route length of the Central China Railway is approximately 935 miles, although a recent Japanese statement gave the figure as 746 miles. The difference is probably

accounted for by mileage still closed as a result of destruction by Free China. Reference to Japanese reconstruction of railways in the neighbourhood of Hangchow was made in our issue of July 23 (page 94).

A prominent part in the Japanese efforts to develop and strengthen her economic grip of those parts of Central China which she controls, is played by the Central China Development Company. It is an organisation similar to the Japanese-controlled North China Development Company which operates in the northern provinces. The company was founded with a share capital of Yen 100,000,000, half of which was subscribed by the Japanese Government, chiefly in the form of works, buildings, equipment, etc., while 27 per cent. of the balance is controlled by the Japanese family concerns of Mitsui, Mitsubishi, and Sumitomo. The substantial participation

of these three families of industrial magnates is said to have resulted from their previous connections with economic interests in China. By May, 1942, the combined share capital of the C.C.D.C. subsidiaries totalled Yen 205,000,000, of which 38 per cent. were held by the C.C.D.C. Since December, 1941, the C.C.D.C. has taken over from the Japanese military administration large numbers of undertakings representing British, Dutch, or American interests. These are now controlled either direct by the C.C.D.C. or by some of its subsidiaries.

Among the undertakings so controlled, the largest is the Central China Railway Company, which has a share capital of Yen 64,000,000. The C.C.D.C. holds the majority of the company's shares, and the balance is in the hands of some 20 Japanese undertakings and the Japanese-controlled puppet government at Nanking.

Another traffic concern now controlled by the C.C.D.C. is the Central China Urban Motorbus Company which operates services in Shanghai as well as in a few other provinces, although a number of services have had to be curtailed by reason of the shortage of motor fuel.

Inland navigation is controlled by two subsidiaries of the C.C.D.C., namely, the Chungha Lines Company, with a share capital of Yen 30,000,000, which enjoys a monopoly in respect of the shipping services on the Yangtze; and the Shanghai Inland Water Navigation Company, which controls about 37,280 miles of waterways.

The Central China Telecommunications Company, with a share capital of Yen 15,000,000, controls the entire telegraph and telephone system in Central China, and has absorbed the British and American telecommunication companies formerly working in that area.

Ministry of War Transport Road Haulage Organisation

By reason of the comparatively lengthy period which elapsed between the initial proposals for the establishment of the Road Haulage Organisation of the Ministry of War Transport and their realisation, various details of the scheme have been announced at widely separated periods, and no complete picture of the situation is readily available. For the benefit of traders, the Ministry has now prepared a short statement on the objectives and general arrangements of the organisation, and from this we have extracted the following notes.

The Road Haulage Organisation is stated to have been established for the purpose of controlling all road movements of general merchandise for distances of 60 or more road miles from the point of collection to the point of delivery of the goods, in order to secure the greatest possible economy in the consumption of motor fuel and tyres.

For the purposes of the organisation, the country is divided into divisions, with the same boundaries as the Civil Regions, and a divisional road haulage officer is in charge of each. Every division is divided into a number of areas, each in charge of an area road haulage officer who supervises the unit controllers in his area. The organisation is based on the formation of some 350 units, which are groups of vehicles previously engaged in carrying the traffic now to be controlled. Each unit is under the operational control of a unit controller who, except at certain ports, is responsible for the acceptance of all controlled traffic originating within the territory which is allocated to his unit. In certain cases, in the more densely populated districts, numbers of units have a common territory for originating traffic, and each unit specialises in traffic for particular destinations. Such units are called directional units.

To provide the necessary facilities for the operation of the units, the Minister has, by agreement, taken control of a number of haulage undertakings. He is engaged in hiring from other undertakings such of their vehicles as they offer for hire and are eligible. A vehicle is eligible for hire if it is operated under an "A," "A" Contract, or "B" licence, or Defence permit; is in reasonably fit condition; and was employed wholly or mainly in carrying the traffic now to be controlled, continuously during the twelve months ended November 2, 1942. The units will consist of those vehicles and the vehicles of the controlled undertakings.

When the units are completed, fuel will

not be granted to any haulier through the Regional Transport Commissioner's organisation for the movement of controlled traffic. In the case of "C" licence vehicles, fuel will not be granted to convey such traffic if the Regional Transport Commissioner is satisfied that economy in fuel and tyres will be obtained by transferring the traffic to the Road Haulage Organisation.

Controlled traffic at present consists of general goods for movement by road for distances of 60 or more road miles. The distance is calculated from the point of collection to the point of delivery of the goods by the normal route on the public highway. Transhipment points from vehicle to vehicle direct or through a warehouse or over a loading bank are not for this purpose points of collection or delivery.

The following classes of commercial traffic are at present excluded from control:—

1. General goods for distances of less than 60 road miles.

2. Parcels and smalls which are defined as any consignment which necessitates:—

(a) Collection by a vehicle other than a trunk vehicle, passing over a traffic bank, sorting and bulking with other goods and trucking; or

(b) Collection in bulk and trucking by the same vehicle to destination depot, and

(c) then passing over a traffic bank, sorting and delivering by a vehicle other than a trunk vehicle.

No consignment equalling or exceeding 20 cwt. shall be regarded as "smalls." A consignment for the purposes of this definition is all packages collected for the same consignor on one day for one consignee.

3. Heavy indivisible loads necessitating the use of vehicles authorised under the Motor Vehicles (Authorisation of Special Types) Orders.

4. Liquids in bulk conveyed in tank vehicles. Liquids in containers are considered to be general goods for the purpose of control.

5. Removals of household furniture and effects.

Except at the ports mentioned below, unit controllers are responsible for the acceptance of controlled traffic originating within their particular territories. They will not accept for road movement any traffic which they are satisfied can be conveyed reasonably by another form of transport, *i.e.*, rail, canal, or coastwise shipping. If a consignor is not satisfied with their decision, he has the right to appeal to the district transport officer either directly or, if a Government Department is interested in the traffic, through the local transport official of that department.

At the ports of Bristol and Avonmouth, Cardiff, Glasgow, Liverpool (including Birkenhead), Manchester, Newport, and Swansea, the area road haulage officer and not the unit controller deals with the acceptance of all controlled traffic *ex ship* or transit shed or warehouse within the dock area.

Traffic must be offered to the appropriate area road haulage officer or unit controller; for example, traffic to be collected in Nottingham cannot be dealt with by a unit controller in London, but only by the appropriate unit controller in Nottingham.

Commercial consignors may continue to offer their traffic to hauliers with which they have been accustomed to doing business. The haulier will be required to consult the unit controller or area road haulage officer before he can say whether the traffic can be accepted, and will be able to quote a rate only after he has obtained one from the unit controller. Traffic dealt with in this way will be invoiced directly to the consignor on behalf of the Minister by the controlled undertaking providing the particular unit centre.

Consignors can use the services of clearing houses, freight agents, etc., which are not holders of carriers' licences. In such cases the Road Haulage Organisation will recognise these firms as agents of the consignor and will invoice the agent at the normal rate, without commission or rebate, chargeable to a consignor. Such agents will, of course, be entitled to charge their customers for services rendered to them.

All traffic carried by the Road Haulage Organisation will be accepted under the Minister's Conditions of Carriage. Similar conditions will apply to general goods accepted for carriage by controlled haulage undertakings for distances of less than 60 miles, and also for parcels and "smalls" accepted by them. All consignments of controlled traffic will be covered by the Minister's delivery, consignment, and receipt notes. The organisation cannot accept consignors' individual documents, nor arrange to obtain or give receipts for goods other than on these documents.

Claims in respect of loss of, or damage to, goods must be made on the carrier whose name is shown on the above-mentioned notes and not to Ministry offices. If, however, the goods were carried in a vehicle belonging to a Government Department, or one of the Services, the claim should be sent to the Ministry of War Transport, Road Haulage Organisation, Berkeley Square House, London, W.1. The Minister has made comprehensive arrangements for insurance of goods in transit to cover the liabilities laid down in his Conditions of Carriage.

Questions in Parliament

Holiday Railway Travel

Mr. David Robertson (Streatham—C.) on July 28 asked the Parliamentary Secretary to the Ministry of War Transport, whether his attention had been drawn to the serious difficulties which occurred at Waterloo and Paddington stations on July 24; and, so that they might be prevented in future, would he consider authorising some extra trains for a short period, or alternatively, a system of selling travel tickets in advance which would reserve seats for the holders.

Mr. P. J. Noel-Baker (Joint Parliamentary Secretary, Ministry of War Transport) stated in a written answer: I would refer Mr. Robertson to the statement which I am making after Questions in the House.

Below is the statement:—

A number of Members have drawn my attention to the difficulties which have recently arisen at railway stations in London and elsewhere, and have made proposals that the difficulties should be dealt with by the rationing of travel, by the institution of a permit system, by the sale of seats in advance, or by the provision of extra trains. My Ministry has examined these proposals with the greatest care, but it has reluctantly come to the conclusion that, as I have before explained to the House, any scheme of rationing or permits or for the advance sale of seats, would create greater difficulties than it would remove. Nor can the Government solve the problem by providing extra trains. It has every sympathy with the desire for holidays, for fresh air, and for change of scene. But it could provide extra trains only if it gave up the priority now accorded to essential war traffic. This it is not prepared to do. With the generous assistance of the press, it has taken every opportunity of explaining the situation to the public, and of warning the public that there can be no additional facilities for holiday travel. If members of the public make long journeys to holiday resorts, they must expect to suffer great discomfort and inconvenience and they ought to realise that they are inflicting similar discomfort and inconvenience on other travellers, whose journeys are necessary in the national interest. I cannot, therefore, encourage members to hope, or the public to expect, that there will be any relaxation of the present restrictions, or any departure from the policy that war traffic must come first. This policy was never more essential than it will be in the next few months. I would ask the House and the public to remember that victories abroad do not reduce the pressure on the railways here, but inevitably increase it, and that the Government must prepare for a greater strain on the railways in the early future than there has ever been before.

Mr. Robertson: Although fully appreciating the difficulties to which the Parliamentary Secretary refers, may I ask whether it is not the fact that the railway companies go on selling tickets long after the capacity of long-distance trains has been fully occupied, and that they subject the unfortunate people to great discomfort and have ultimately to remove them in extra trains? Would it not be more sensible to face the situation and realise that after four years of war factory workers do need some change?

Mr. Noel-Baker: The railway companies may not and do not provide extra trains beyond the ceiling which is allowed. They could only provide extra trains, as I have explained in my statement, by holding up essential war traffic, which the Government are not prepared to allow. That being the

case, I am afraid the only solution to the problem is less holiday travel.

Sir Alfred Beit (St. Pancras South-East—C.): Is it not the fact that one of the factors which contribute to overcrowding of trains is the excessive military leave travel? Will the Parliamentary Secretary consult with his colleagues in the Service Departments as to a reduction of travel by granting leave twice a year for a fortnight rather than four times a year for a week?

Mr. Noel-Baker: We have been in constant communication with the Service Departments about the problem, and they have made great concessions to our point of view. Many members of the Services do now take a fortnight's leave twice a year instead of a week's leave four times, and the Services are constantly looking for ways in which to help. If any further progress in that direction is possible, my Ministry will be delighted, but we must in the last resort accept the view of the Service Departments as to what is necessary.

Sir Ralph Glyn (Abingdon—C.): Could the Parliamentary Secretary do something to assist the railway servants, who are put in an almost impossible position? They are working 18 hr. out of 24. Crowds of people arrive at the stations, and the railway companies have no power to refuse to sell tickets and the whole difficulty is thrust on the railway workers.

Mr. Noel-Baker: I have the utmost sympathy with the railway workers, and I should like to pay a tribute to the magnificent work which they do and the good temper which they almost invariably display, but I must say again that I am afraid the real solution to their difficulties lies with the public itself.

Sir Herbert Williams (South Croydon—C.): Will not the Minister consider further the suggestion made by Sir Alfred Beit? Could we not offer to the troops an increase of total leave provided they took their leave half as frequently as now? It is obvious that the bulk of the railway travel in this country is being carried out by one-tenth of the public, the persons who are travelling on pleasure, and those who have to travel on business are exposed to all this difficulty. There will be ample idle locomotive power in this country for the next 10 days, because munition traffic will be cut down to a minimum because of the closing of factories, and why, therefore, should not the public have the opportunity of travelling in comfort?

Mr. Noel-Baker: Some forms of war traffic, of course, will be cut down, but perhaps they will be replaced by other forms of war traffic, and what the Government has to bear in mind is the strain on the train crews, who during the coming autumn and winter will have to bear a heavier load than ever before, and we must take every opportunity of reducing that load when it can be done. As to Service leave, I think troops do get a day or two extra now if they take a fortnight, but I am willing to examine that aspect of the matter again with the Service Departments.

Mr. Rhys Davies (Westhoughton—Lab.): In view of the fact that long journeys increase the pressure on the railways, is it not possible to arrange a scheme whereby holiday makers can be induced to go to near-by resorts?

Mr. Noel-Baker: We have done everything possible in that direction without holding up essential traffic or increasing the strain on train crews.

Mr. Aneurin Bevan (Ebbw Vale—Lab.): In view of the fact that the Government is apparently not prepared to give extra train facilities, will it not make another attempt to persuade the public not to expose itself

to the appalling scenes that occur at railway terminal stations in which women and children suffer very great hardship? Will he therefore suggest that a Member of the Cabinet should broadcast a special appeal on this matter to the people?

Mr. Noel-Baker: I will put Mr. Bevan's suggestion to the Minister of War Transport. I think the Government really has done everything it can. It has had generous assistance from the press, and I think the public ought to know the situation.

Sir Irving Albery (Gravesend—C.): I should like to ask whether anything can be done along the lines suggested of the railway companies being authorised to limit the number of tickets they sell to the accommodation available?

Mr. Noel-Baker: It is difficult, because people who are determined to travel, and people who must travel on essential business always hope that if they miss one train they will get the next, but I will ask my advisers to look further into the matter.

M.P.'s and Travel Priority

Captain J. A. L. Duncan (North Kensington—C.) on July 27 asked the Parliamentary Secretary to the Ministry of War Transport what priority rights Peers had in the allotment of sleeping berths in trains; whether they could obtain these to travel to their homes; and whether Members of the House of Commons could also be granted this priority.

Mr. Noel-Baker stated in a written answer: When a Peer makes a journey between London and his usual place of residence in order to attend the sittings in another place, or to return home from those sittings, he is given the same priority that is accorded to Members when they are travelling between London and their constituencies. I have recently reviewed the priority accorded to Members of the House of Commons, but I regret that I have nothing to add to the full statement which the Minister of War Transport caused to be circulated to Members a week ago.

Railway Carriage Seating

Mr. J. D. Murray (Spennymoor—Lab.) on July 28 asked the Parliamentary Secretary to the Ministry of War Transport whether he was aware that if the arm-rests were raised in first class compartments it was possible for four persons to sit on each side as compared with three when the arm-rests were lowered; and what steps he proposed to take to see that this additional seating capacity was made available.

Mr. Noel-Baker stated in a written answer: The construction of first class compartments and their seating arrangements differ so widely that it is not possible to make any uniform rule that can be generally applied. As Mr. Murray knows, however, instructions were given some time ago to the railway staff that, if the lifting of arm-rests would afford reasonable accommodation for extra passengers, the arm-rests must be lifted. To make this instruction more effective, I am now directing the railway companies to post notices in compartments where the arms should be lifted, showing the number of seats which are available.

Assisted Travel for Workers

Mr. Robert Taylor (Morpeth—Lab.) on July 28 asked the Parliamentary Secretary to the Ministry of War Transport whether munitions workers entitled to holidays during August had the opportunity of using the usual cheap tickets.

Mr. Noel-Baker in a written answer stated: I presume that Mr. Taylor has in mind the assisted travel scheme for workers transferred from their homes. The Minister

of Labour & National Service announced in March that the vouchers under this scheme would be available until the end of September, but that they could not be used during Bank Holiday periods. During these periods it is necessary to suspend these vouchers and other travel concessions, in order to ensure the movement of essential war traffic. Vouchers will not, therefore, be issued for journeys from July 13 to August 3 inclusive.

Parents of Service Personnel

Mr. W. A. Burke (Burnley—Lab.) on July 28 asked the Parliamentary Secretary to the Ministry of War Transport whether he would extend to the parents of serving personnel the same concessions as to cheap rail travel as were given to wives and children of serving men.

Mr. Noel-Baker stated in a written answer: If members of the Forces are in hospital, their parents and other relatives can obtain vouchers for cheap railway travel to visit them. If a patient is on the danger list, his or her relations may travel free. As Mr. Burke is aware, the traffic on the railways is now very heavy, and it is still increasing. In consequence, I do not think it would be wise to extend to parents of Service personnel the concession rates now allowed to their wives and children.

Conveyance of Racehorses by Rail

Mr. W. W. Wakefield (Swindon—C.) on July 28 asked the Parliamentary Secretary to the Ministry of War Transport what was the purpose of Order No. 979 of 1943 in connection with the Transport of Horses (Amendment) Direction (No. 2), 1943, dated July 15, 1943, made by the Minister of War Transport.

Mr. Noel-Baker stated in a written answer: As I explained to Major A. M. Lyons (East Leicester—C.) in answer to a question on April 13, the purpose of this direction was to allow the conveyance of racehorses to Newmarket in order that they may run in any of the eight "open" races which take place there.

Fire-Fighting Equipment on Trains

Mr. W. W. Wakefield (Swindon—C.) on July 28 asked the Parliamentary Secretary to the Ministry of War Transport what were the fire-fighting appliances carried on passenger, mail, and goods trains.

Mr. Noel-Baker stated in a written answer: The guards-vans of passenger and mail trains carry buckets, ladders, fire extinguishers, first-aid sets, and the necessary tools for rescue work. Fire-fighting equipment is not provided in the brake-vans of goods trains.

Railway Operation and Wireless

Mr. W. W. Wakefield (Swindon—C.) on July 28 asked the Parliamentary Secretary to the Ministry of War Transport (1) when he proposed to introduce modern means of verbal communication between whoever might be in charge of a train and their control, as had existed for many years between the captains of aircraft and their land-based controls, and (2) whether he was aware that the only way the engine driver could communicate with the guard of a train was by blowing blasts on his whistle and that the guard could communicate with the driver only by the application of his brakes, with consequent danger to the safety of the train; and when would this century-old method of communication be modernised with an up-to-date intercommunication system, as in aircraft.

Mr. Noel-Baker in a written answer stated: Wireless apparatus is being successfully used for certain purposes in railway operation today. Experiments in this

form of communication between driver and guard or signalman were made some years before the war; but they were of a preliminary kind, and in any case there are at present many special difficulties which result from war conditions. Mr. Wakefield will also appreciate that the problem of railway operation differs greatly from that of aircraft; but he may rest assured that his proposal will be borne in mind.

Railway Level Crossings

Mr. T. Driberg (Maldon—Ind.) on July 20 asked the Minister of Town & Country Planning whether he would consider, with the Minister of War Transport, the possibility of replacing all level crossings by road or rail bridges after the war.

Mr. W. S. Morrison (Minister of Town & Country Planning) Yes, sir.

Fish Zoning Scheme

Mr. Evelyn Walkden (Doncaster—Lab.) on July 28 asked the Parliamentary Secretary to the Ministry of Food whether he could make any statement as to the savings in rail transport which had been effected by the Fish Zoning Scheme in recent months.

Mr. W. Mabane (Parliamentary Secretary, Ministry of Food): Yes, sir. The Minister of War Transport has recently received from the Railway Executive Committee a statement giving the particulars of booked fish-train mileage during the week ended May 8, 1943, and the corresponding week in 1942. The quantity of fish landed in these two weeks was approximately the same. In the week ended May 8, 1943, booked fish trains ran 19,598 miles; the corresponding figure for 1942 was 30,208. The decrease in 1943 was, therefore, 10,610 miles or 35 per cent.

Mr. Walkden: Will the Parliamentary Secretary convey to the Minister of War Transport the appreciation of his determination in sticking to the scheme against those who would like to destroy it and also thank him for delivering the goods.

Mr. Mabane: I certainly will.

London Bus Services

Captain J. F. E. Crowder (Finchley—C.) on July 21 asked the Parliamentary Secretary to the Ministry of War Transport if he would make any statement on the frequent strikes and stoppages on bus services due to the action of employees in the Great Metropolitan area.

Mr. P. J. Noel-Baker stated in a written answer: I am unable to accept Captain Crowder's suggestion that there have been frequent strikes and stoppages on the bus services of the London Passenger Transport Board. During the last two years there have been three stoppages on these services; none of them lasted for more than a day or two; and only four depots were involved.

Transport of Plums

Mr. M. P. Price (Forest of Dean—Lab.) on July 21 asked the Parliamentary Secretary to the Ministry of Food whether in view of the large plum crop expected in some districts, a modification could be made in the road delivery radius to enable plum crops, where they were plentiful, to be sent by road for a longer distance than would be possible at present.

Mr. W. Mabane (Parliamentary Secretary, Ministry of Food) stated in a written answer: Any modification of the restrictions on the transport of plums by road will be made if circumstances arise which make such modification necessary to prevent waste of fruit. Licences necessary in this connection will be issued by my department in consultation with the Ministry of War Transport as in 1942.

Road Vehicles and Drivers Order

Mr. W. W. Wakefield (Swindon—C.) on July 28 asked the Parliamentary Secretary to the Ministry of War Transport, whether he would state the position held by Mr. G. F. Stedman, who signed the Emergency Powers (Defence) (Road Vehicles & Drivers) Order (S.R. & O. No. 963 of 1943), under whose signature appeared the words "Authorised by the Minister."

Mr. Noel-Baker in a written answer stated: Mr. G. F. Stedman, M.C., is a Principal Assistant Secretary in the Ministry of War Transport.

General Electric Co. Ltd.

The annual general meeting of the General Electric Co. Ltd. was held on July 29 at Magnet House, Kingsway, London, Mr. A. H. Railing, Chairman of the company, presiding.

The Chairman, after paying a notable tribute to the memory of the late Lord Hirst, desired to reiterate the regret expressed in previous years by Lord Hirst that war taxation did not allow the company to add still further to its reserves during this period. For years the directors had followed the policy of writing off items of expenditure and depreciation which should always be written down out of the current year's profit, but which, not being allowed for tax purposes, had to be borne entirely out of the available net profits. These sums, necessarily larger during years of increased activity, could only be found either out of the sums which might otherwise be added to reserve or out of the amount available for dividends.

The works, constantly expanding, had largely increased their output during the past year and still further increased their order book. The research laboratories were engaged to their utmost limit on work of the highest national importance. The necessity to secure the greatest possible efficiency from management, staff, work-people, and machinery was fully realised. Every effort was being made to attain it in a spirit of mutual understanding.

They were naturally trying to plan both for the reconstruction period following the close of the war and afterwards according to the conditions which might apply. Some of these conditions could not yet be clearly foreseen, as, for instance, the degree of international co-operation for the marketing and exchange of goods, the relative importance of replacing capital goods or providing consumers goods immediately after the war, the spending power available for various countries, and the measure of expansion allowed to various industries. Yet one factor stood out clearly. Given a degree of security to plan for a period of years, there were unlimited possibilities in this industry to expand and provide employment both in the fields of application which the company had successfully covered in the past, as well as in new fields hardly dreamt of, which could be uncovered by farsighted research. This company had always realised the fundamental importance of research for industry. The vigorous research policy followed for many years had fully justified itself in peace and war, and it would be continued and expanded.

The company must be able to organise not on the basis of a yearly budget, but for a much longer period. This alone would enable the management to plan on a comprehensive and farsighted scale, and thus assure continuity of employment, a reasonable return for the capital invested, and an efficient and economic service for the nation and for the world.

Notes and News

R.S.A. Examinations.—The renewed Road Transport Examination of the Royal Society of Arts had 315 entries during the 1942-43 session, which is nearly treble the figure for 1941.

South African Railway Earnings.—Railway earnings from June 6 to July 10, which include the record total of £966,251 for the week ended July 3, amounted to £4,372,456, compared with £3,966,744 for the corresponding period of 1942.

Central Argentine Railway.—Reuter reports that the Central Argentine Railway has announced a reduction in some of its long-distance train services, because of increasing shortage of fuel. The reduction in services is effective from August 1.

Cost of Living Index.—The official cost of living index figure on July 1 was 100 points above the level of July, 1914, compared with 99 points on May 1 last. In July, 1938, it was 59 points, and in July, 1939, 56 points, above the level of July, 1914.

Canadian Pacific Railway Company.—For the month of June last gross earnings amounted to \$24,698,000, an increase of \$3,453,000 in comparison with June, 1942. In the working expenses of \$20,277,000 there was an advance of \$3,206,000, and the net earnings of \$4,421,000 showed an improvement of \$247,000. Aggregate gross earnings from January 1 to June 30, 1943, were \$136,231,000, an increase of \$15,198,000 in comparison with the first six months of 1942, but the aggregate net earnings of \$21,203,000 were \$745,000 lower.

Canadian National Railways.—Gross earnings for the month of June, 1943, were \$39,260,000, an increase of \$7,471,000 in comparison with June, 1942. In the operating expenses of \$29,892,000 there was an advance of \$6,049,000, and the net earnings of \$9,368,000 were \$1,422,000 higher. Aggregate gross earnings for the first six months of 1943, amounting to \$210,484,000, were \$41,069,000 greater than those for the first six months of 1942, and the aggregate

net earnings of \$44,935,000 showed an improvement of \$6,916,000.

French Micheline Electric Railcar.—A new type of electric railcar is reported to have been introduced recently on the Paris suburban line between Pont Cardinet (1 mile from St. Lazare Station) and Auteuil Boulogne. Its wheels are fitted with rubber tyres, and its four electric motors have a combined power of 194 h.p. Rapid acceleration enables the vehicle to attain its normal service speed within a few seconds; its maximum speed is 71 m.p.h. The railcar, officially styled "Micheline Z 23,271," is 124 ft. 8 in. long, and has accommodation for 256 passengers, of whom 120 stand.

Edgar Allen & Co. Ltd.—Trading profit for the year ended March 31, 1943, was £436,208 (£307,511), and other income was £21,573 (£25,562). After providing £370,000 (£250,000) for taxation, £37,626 (£31,782) for depreciation, £300 (same) for directors' fees, and £3,400 (£4,500) for War Damage Act payments there is a net profit of £46,455 (£46,491). Adding £36,341 brought in gives a total of £82,796. The dividend on the ordinary shares is at the rate of 12½ per cent. per annum, less tax (same), £20,000 (£15,000) is transferred to general reserve, and £37,340 is carried forward.

Southern Railway Prisoners of War Fund.—Practically every member of the Southern Railway staff contributes to the Prisoners-of-War Comforts Fund organised by the company's Welfare Officer. This fund, by arrangement with, or in co-operation with next-of-kin, provides the expensive quarterly personal parcel, and also sends regularly each month a supply of 500 cigarettes and 1 lb. of tobacco, and at less frequent intervals, books, educational and otherwise, music, games, etc. A number of men are sitting for the Institute of Transport and other examinations. Personal correspondence is maintained with each man. In all 240 Southern railwaymen are prisoners of war. Nearly 1,000 quarterly, personal parcels, over 4,500 copies of selected fiction books and 2,800 copies of educational books have been sent,

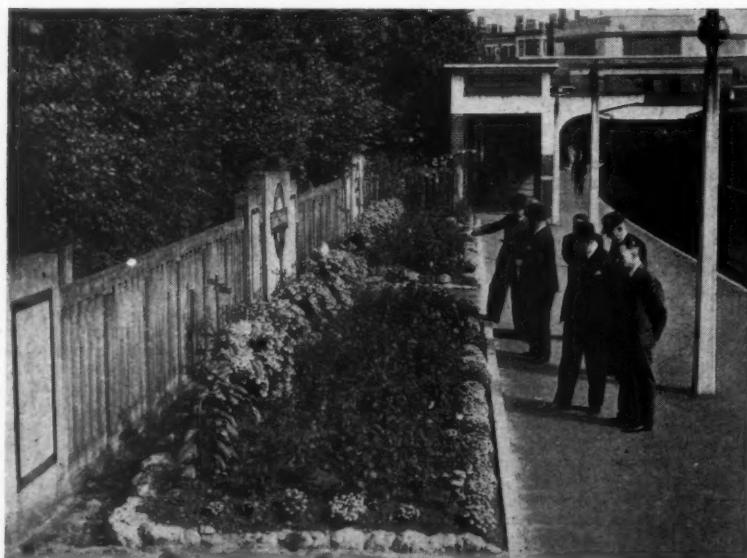
also 3,000 parcels containing 1,334,000 cigarettes and 2,810 lb. of tobacco.

Southern Railway Prisoners of War Return.—Among the crew of the destroyer *Sikh*, which was sunk in an attack on Tobruk in September last, were four members of the Southern Railway, all Able Seamen. They were taken prisoner, and sent to Italy. They were among the latest batch of prisoners of war to be repatriated from Italy. On July 22 they were invited to Waterloo and presented with a cheque by Mr. E. J. Missenden, the Southern Railway General Manager. Congratulating them on their return, he said it was a token

British and Irish Railway Stocks and Shares

Stocks	Highest 1942	Lowest 1942	Prices	
			July 30, 1943	Rise/Fall
G.W.R.				
Cons. Ord. ...	58	39	60½	- 2
5% Con. Pref. ...	115½	105½	112½	- 1
5% Red. Pref. (1950) ...	109½	103½	107½	- 1
5% R.C. Charge ...	133½	123½	126½	- 1
5% Cons. Guar. ...	130½	121½	123½	- 2
4% Deb. ...	117	105	109	-
4½% Deb. ...	118	108	110½	-
4½% Deb. ...	125	113	118½	-
5% Deb. ...	137	127	129	-
2½% Deb. ...	77	70	75½	-
L.M.S.R.				
Ord. ...	28½	16½	31½	- 1½
4% Pref. (1923) ...	63½	50½	62½	-
4% Pref. ...	76½	67½	76	- ½
5% Red. Pref. (1955) ...	103½	94½	103½	-
4% Guar. ...	104½	97½	101	-
4% Deb. ...	108½	101½	104½	-
5% Red. Deb. (1952) ...	111	107½	109½	-
L.N.E.R.				
5% Pref. Ord. ...	9½	2½	9½	- ½
Def. Ord. ...	5	1½	4½	- ½
4% First. Pref. ...	62	49½	62½	-
4% Second. Pref. ...	32½	18½	33½	- ½
5% Red. Pref. (1955) ...	95½	79	97½	-
4% First. Guar. ...	98	88	98½	-
4% Second. Guar. ...	90	78	91½	-
3% Deb. ...	85	76	80½	-
4% Deb. ...	106½	100½	103	-
5% Red. Deb. (1947) ...	106	103	104	-
4½% Sinking Fund Red. Deb. ...	106	102½	105½	-
SOUTHERN				
Pref. Ord. ...	77	61½	75½	- 1
Def. Ord. ...	23½	14½	24	- ½
5% Pref. ...	112½	104	111½	- 1
5% Red. Pref. (1964) ...	110½	105½	112½	-
5% Guar. Pref. ...	131	121½	123½	- 2
5% Red. Guar. Pref. (1957) ...	115½	109½	113½	- 1
4% Deb. ...	116	104½	108	-
5% Deb. ...	134	125½	129½	-
4% Red. Deb. (1962-67) ...	110½	106	107½	-
4% Red. Deb. (1970-80) ...	111	106½	107½	-
FORTH BRIDGE				
4% Deb. ...	109½	108	106	-
4% Guar. ...	105½	100	104½	-
L.P.T.B.				
4½% "A" ...	122½	111	117½	-
5% "A" ...	131½	122	127½	-
3% Guar. (1967-72) ...	95½	97½	99	-
5% "B" ...	121	111½	115½	-
5% "C" ...	56½	38	64½	+ 1
MERSEY				
Ord. ...	27½	20½	32	-
3% Perp. Pref. ...	61½	56½	61	-
4% Perp. Deb. ...	102½	99½	103	-
3% Perp. Deb. ...	80½	76	78	-
IRELAND				
BELFAST & C.D.				
Ord. ...	9	4	9	-
G. NORTHERN				
Ord. ...	29½	12½	19	- ½
G. SOUTHERN				
Ord. ...	25	10	10½	-
Pref. ...	29	12½	16½	+ 1½
Guar. ...	53	35½	35	-
Deb. ...	71½	55½	59	+ 1½

§ ex-dividend



London Passenger Transport Board officials inspecting the garden on Ealing Common Station which recently was adjudged the best on the Underground system for the second year in succession

on behalf of all their colleagues on the Southern Railway, and to make up for the parcels despatched to them which they could not receive before release from captivity. It was also a reminder that although serving with the Navy, they were still members of the Southern Railway family. The four men—Able Seamen S. A. Cresswell of Battersea, T. Rolf of Brighton, K. J. Wilson, of Crawley, and R. Stroud of Henfield, were formerly employed as Oiler, Junior Porter, Signwriter, and Storesman respectively on the Southern Railway.

Transport Investment Trust Limited.

—A general meeting of members of this company (now in voluntary liquidation) will be held at Regina House, 1-5, Queen Street, E.C.4, on Monday, August 23, at 11 a.m., to receive the account of the liquidator showing how the winding-up of the company has been conducted and its property disposed of.

Turin Light Railways.—The light electric railways, or interurban tramways, in the neighbourhood of Turin, which were formerly in the hands of a Belgian company, and are now worked by the S.A.T.T.I. (Società Anonima Torinese Tranvie Intercomunali), include the 15-mile Turin-Trofarello-Poirino suburban line, in respect of the 6-mile Trofarello-Poirino section of which the Italian State pays an electrification subsidy.

Barcelona Underground Railway.—The Barcelona transport company, Gran Metropolitano de Barcelona S.A., which owns $4\frac{1}{2}$ km. of underground railway, recently presented its report for the year 1942, according to the Official German News Agency. Traffic on all the company's lines rose considerably during the year. Traffic receipts amounted to 5.8 million pesetas, an increase of 1.2 million on the previous year. In November last the tariff was raised by 5 centimos to a unit price of 30 centimos.

A Roumanian Nationalisation.—An agreement was concluded recently between the company owning the 69½-mile narrow-gauge railway line between Sibiu and Sighisoara in Transylvania, and the Roumanian State Railways, whereby the latter is purchasing the line for Lei 52,500,000. The sum of Lei 26,500,000 is to be paid in 5 per cent. debentures, and the balance in cash. The line was taken over by the State

Railways in 1919 and was also worked by that administration for its own account. No payment had been made to the company in compensation before the present agreement was reached.

London Midland & Scottish Railway Company.—At a meeting of the board on July 29, it was decided to make interim dividend payments for the past half-year, on the 4 per cent. guaranteed stock, the 4 per cent. preference stock, and the 4 per cent. preference (1923) stock at the rate of 2 per cent. actual, less tax at 10s. in the £. Warrants will be posted on August 24.

Great Northern Railway Company (Ireland).—The directors have decided to pay on October 1 next an interim dividend of 2 per cent. actual, less tax, on the consolidated 4 per cent. guaranteed stock in respect of the year to December 31, 1943. The liabilities of the company in respect of taxation and war damage contributions have not yet been ascertained, and the directors have, therefore, decided to defer consideration of dividends on the Consolidated 4 per cent. preference stock and the ordinary stock until the end of the year.

London & North Eastern Railway Company.—At a meeting of the board on July 29 the undermentioned interim dividends for the past half-year were declared: 2 per cent. actual for the half-year on the 4 per cent. first guaranteed stock; 2 per cent. actual for the half-year on the 4 per cent. second guaranteed stock; 2 per cent. actual for the half-year on the 4 per cent. first preference stock; $2\frac{1}{2}$ per cent. actual for the half-year on the 5 per cent. redeemable preference stock, 1955; and 1 per cent. actual for the half-year on the 4 per cent. second preference stock; in each case, less tax at 10s. in the £. Warrants will be posted on August 20.

John Brown & Co. Ltd. and its Subsidiaries.—Lord Aberconway in the course of his address at the ordinary general meeting on July 23, said that as well as owning a large proportion of the ordinary share capital of Thos. Firth & John Brown Limited, the company owned all the share capital in three important subsidiaries, namely, the Dalton Main Collieries Limited, Craven's Railway Carriage & Wagon Co. Ltd., and Markham & Co. Ltd. Craven's Railway Carriage & Wagon Co. Ltd. was

very busily engaged on work of national importance, and it was reasonable to assume that when the war was ended there would be a large demand for railway rolling stock. Markham & Co. were high-class engineers capable of doing work of the heaviest character, one of their special lines being colliery plant. All the available capacity of this company was booked up for very many months ahead. These companies were eminently successful, and there was good reason to feel every confidence in their management.

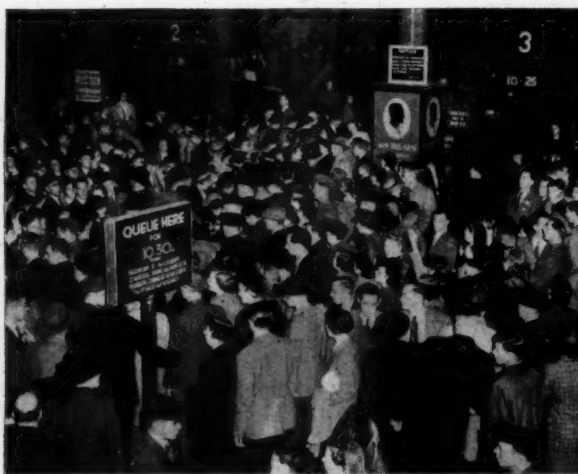
A European De Luxe Train.—What is probably the only international luxury train in Europe is the new broad-gauge Lusitanian Express between Lisbon and Madrid, which made its first trip on July 21. It is scheduled to take 14 hr. to cover the journey of approximately 410 miles between the two capitals.

The Zongouldak Coal Railway in Turkey.—Although the coal railway between Kozlu and Zongouldak, in the coal-mining region on the Black Sea coast, is but 3 miles long, its construction took about three years; the line was opened to traffic on May 2 last. It crosses a very broken area, which necessitated the construction of two tunnels, respectively, 4,428 ft. and 853 ft. long. Until the completion of the railway, coal was conveyed from the Kozlu region by primitive road transport and only in favourable weather.

Road Accidents in June, 1943.—The return issued by the Minister of War Transport of the number of persons reported to have died, or to have been injured, as a result of road accidents in Great Britain during the month of June last shows 380 deaths (compared with 437 in June, 1942) 2,258 seriously injured (compared with 2,688 in June, 1942), and 6,607 slightly injured (compared with 8,408 in June, 1942). The total of 380 deaths is 16 fewer than in April, which previously had the lowest record of fatal road accidents for many years.

Contracts and Tenders

The South Indian Railway has placed an order, to the inspection of Messrs. Wolfe Barry, Robert White & Partners, with the General Electric Co. Ltd. for 650 electric lamps for Sunbeam locomotive headlights.



Holiday travel crowds at Paddington Station, G.W.R. Left: Platforms 1 and 2 after the departure of the 8.50 and 8.55 a.m. South Wales trains on July 24, the day on which the holiday travel rush began. Right: The circulating area at at 9.30 a.m. on the same day

Railway Stock Market

Buoyant conditions have been maintained in the stock and share markets, where attention continued to centre mainly on industrial shares, particularly those of companies which, according to current market views, may offer scope for improvement in earnings and dividends after the war. Many shares included in this category have advanced further; long-term hopes were a much more powerful influence than short-term considerations, such as the small yields shown on the basis of last year's dividends. Gilt-edged securities and leading investment stocks generally have not participated in the upward trend of values, and home railway securities again had a neglected appearance. Nevertheless, despite absence of improved demand for the latter, selling was not heavy, and in fact, most of the junior stocks were moderately better in price. It is apparent that the great majority of holders are willing to take a long view in the confidence that the railways and their stockholders will receive fair treatment in post-war developments affecting transport. Moreover, it seems only reasonable to expect that sooner or later home railway junior stocks must participate in the rising trend of equity values. Maintenance of the interim dividend decisions was in accordance with general expectations; there are considered to be sound prospects of the total payments being

maintained for the current year. In some quarters, however, there are considered to be possibilities of slightly better payments on L.M.S.R. ordinary and on L.N.E.R. second preference. Great Western ordinary yields $7\frac{1}{2}$ per cent. on the basis of last year's $4\frac{1}{2}$ per cent. dividend; and L.M.S.R. ordinary fully $7\frac{1}{2}$ per cent. on last year's $2\frac{1}{2}$ per cent. payment. Southern preferred returns over $6\frac{1}{2}$ per cent., which must also be considered as attractive when judged in relation to the investment merits of this stock. London Transport "C" has been in request at improved prices; the yield is relatively moderate, but sentiment in this case reflects the view that after the termination of the financial agreement there will be reasonable scope for higher dividends. The financial agreement is scheduled to run until at least one year after the end of hostilities, and may possibly remain in force for some time after the latter, according to some views. There have been few movements among home railway prior charges, the trend in which is governed mainly by that in gilt-edged stocks.

After their recent improvement, Argentine railway securities have shown a reactionary tendency due to further indications of the difficult conditions under which the railways are working, and the news that the Argentine Government has rejected the railways' claim for an in-

crease in tariffs up to 20 per cent. Moreover, Brazilian railway stocks remained under the influence of the recent statement by the directors of the Great Western Railway of Brazil. Nevertheless, the rather lower levels ruling for stocks of South American railway companies were attributed mainly to absence of improvement in demand; no heavy selling was reported. It is generally felt that these stocks must be considered mainly as long-term holdings, awaiting expansion in demand for South American products after the war. There is, however, little scope for improvement in earnings in the case of the Argentine companies until they receive reasonable treatment from the authorities in that country.

Compared with a week ago, Great Western ordinary has improved from 60 $\frac{1}{2}$ to 62 at the time of writing; the 5 per cent. preference recovered from 112 to 113 $\frac{1}{2}$, and the 4 per cent. debentures were maintained at 109. L.M.S.R. ordinary was slightly better on balance at 32 $\frac{1}{2}$, the 1923 preference again 63, and the senior preference improved from 76 $\frac{1}{2}$ to 77 $\frac{1}{2}$. L.N.E.R. second preference improved from 34 $\frac{1}{2}$ to 35 $\frac{1}{2}$ and the first preference was again 63. At 24 $\frac{1}{2}$ Southern deferred was unchanged on balance; the preferred improved to 76 $\frac{1}{2}$. London Transport "C" was half-a-point better at 64. Elsewhere, French railway sterling bonds recorded further gains. Canadian Pacifics were firmer.

Traffic Table and Stock Prices of Overseas and Foreign Railways

Railways	Miles open	Week ending	Traffic for week		No. of Weeks	Aggregate traffic to date			Shares or stock	Prices			
			Total this year	Inc. or dec. compared with 1941/2		Totals		Increase or decrease		Highest 1942	Lowest 1942	July 30, 1943	Yield % (Notes)
						1942/3	1941/2						
South & Central America													
Antofagasta (Chili) & Bolivia	834	25.7.43	£ 30,340	+ 8,190	29	£ 819,930	£ 641,290	+ 178,640	Ord. Stk.	14	7 $\frac{1}{2}$	14 $\frac{1}{2}$	Nil
Argentine North Eastern	753	24.7.43	14,568	+ 1,098	4	46,452	47,274	- 822	"	6 $\frac{1}{2}$	3	7	Nil
Bolivar	174	June, 1943	4,868	+ 500	25	32,414	27,431	+ 4,983	6 p.c. Deb.	19 $\frac{1}{2}$	10	20 $\frac{1}{2}$	Nil
Brazil	...	...	...	...	...	...	...	...	Bonds	20 $\frac{1}{2}$	9	21	Nil
Buenos Ayres & Pacific	2,807	24.7.43	82,550	+ 1,200	4	278,400	310,920	- 32,520	Ord. Stk.	7 $\frac{1}{2}$	4	6 $\frac{1}{2}$	Nil
Buenos Ayres Great Southern	5,080	24.7.43	129,360	+ 1,080	4	459,600	444,300	+ 15,300	Ord. Stk.	12 $\frac{1}{2}$	7 $\frac{1}{2}$	12	Nil
Buenos Ayres Western	1,930	24.7.43	48,720	+ 1,080	4	159,300	170,220	- 10,920	"	12 $\frac{1}{2}$	6	11	Nil
Central Argentine	3,700	24.7.43	111,981	+ 16,483	4	384,720	426,627	- 41,907	"	9 $\frac{1}{2}$	4 $\frac{1}{2}$	8 $\frac{1}{2}$	Nil
Do.	...	...	...	...	...	...	...	...	Divd.	3 $\frac{1}{2}$	2 $\frac{1}{2}$	4	Nil
Cent. Uruguay of M. Video	972	24.7.43	30,249	+ 9,418	4	105,610	76,769	+ 28,841	Ord. Stk.	8	4	5 $\frac{1}{2}$	Nil
Costa Rica	262	June, 1943	22,313	+ 2,732	45	196,140	247,801	- 51,661	Stk.	16 $\frac{1}{2}$	11	14	Nil
Dorada	70	19.6.43	21,939	+ 7,550	20	98,259	63,546	+ 34,713	1 Mt. Db.	90 $\frac{1}{2}$	89	94 $\frac{1}{2}$	6 $\frac{1}{2}$
Entre Rios	808	24.7.43	19,104	+ 2,682	4	62,256	60,120	+ 2,136	Ord. Stk.	33	4	7	Nil
Great Western of Brazil	1,030	24.7.43	13,600	+ 3,800	29	455,700	295,300	+ 160,400	Ord. Sh.	9 $\frac{1}{2}$	9 $\frac{1}{2}$	42 $\frac{1}{2}$	Nil
International of Cl. Amer.	794	June, 1943	\$591,995	+ \$62,010	24	\$3,904,639	\$3,689,137	+ \$215,502	1st Pref.	1 $\frac{1}{2}$	5/3	1 $\frac{1}{2}$	Nil
Interoceanic of Mexico	...	...	...	...	...	...	...	...	5 p.c. Deb.	11 $\frac{1}{2}$	5	83 $\frac{1}{2}$	Nil
La Guaira & Caracas	228	June, 1943	8,195	+ 2,335	26	53,590	37,990	+ 15,600	Ord. Stk.	6 $\frac{1}{2}$	3 $\frac{1}{2}$	6	Nil
Leopoldina	1,918	24.7.43	38,656	+ 9,614	29	980,610	875,594	+ 105,016	Ord. Stk.	1	1	1 $\frac{1}{2}$	Nil
Mexican	483	21.7.43	ps. 374,800	+ ps. 78,900	3	ps. 1,136,000	ps. 875,594	+ ps. 260,406	Ord. Stk.	1	1	1 $\frac{1}{2}$	Nil
Midland Uruguay	319	May, 1943	15,947	+ 993	48	168,895	152,464	+ 16,431	"	77 $\frac{1}{2}$	3 $\frac{1}{2}$	76 $\frac{1}{2}$	Nil
Nitrate	382	15.7.43	7,089	+ 8,683	28	78,182	100,400	- 22,218	Ord. Sh.	77 $\frac{1}{2}$	3 $\frac{1}{2}$	76 $\frac{1}{2}$	Nil
Paraguay Central	274	23.7.43	\$5,161,000	+ \$1,391,000	4	\$17,551,000	\$13,888,000	+ \$3,663,000	Pr. Lt. Stk.	53	40	53 $\frac{1}{2}$	11 $\frac{1}{2}$
Peruvian Corporation	1,059	June, 1943	104,734	+ 22,552	52	1,045,065	915,630	+ 129,435	Pref.	19 $\frac{1}{2}$	5 $\frac{1}{2}$	15	Nil
Salvador	100	May, 1943	c 103,000	+ c 3,000	46	c 1,137,000	c 959,172	+ c 177,828	Ord. Stk.	59	41	59	3 $\frac{1}{2}$
San Paulo	153 $\frac{1}{2}$	18.7.43	55,367	+ 17,077	29	1,145,012	1,042,040	+ 102,972	Ord. Sh.	41 $\frac{1}{2}$	23 $\frac{1}{2}$	30 $\frac{1}{2}$	Nil
Taltal	160	June, 1943	2,605	+ 3,195	29	48,811	55,510	- 6,699	Ord. Stk.	8 $\frac{1}{2}$	2 $\frac{1}{2}$	5 $\frac{1}{2}$	Nil
United of Havana	1,301	24.7.43	47,775	+ 1,102	4	172,666	130,979	+ 41,687	Ord. Stk.	8 $\frac{1}{2}$	2 $\frac{1}{2}$	5 $\frac{1}{2}$	Nil
Uruguay Northern	73	May, 1943	1,666	+ 483	48	15,772	13,266	+ 2,506	"	—	—	—	—
Canada													
Canadian Pacific	17,034	21.7.43	1,244,800	+ 244,400	29	30,824,600	27,140,000	+ 3,684,600	Ord. Stk.	16 $\frac{1}{2}$	9 $\frac{1}{2}$	16 $\frac{1}{2}$	Nil
India													
Barel Light	202	30.6.43	17,835	+ 4,928	13	63,075	39,600	+ 23,475	—	—	—	—	—
Bengal & North Western	2,090	Nov., 1942	264,975	+ 33,087	8	449,400	561,082	- 111,682	—	—	—	—	—
Bengal-Nagpur	3,267	Feb., 1943	932,775	+ 84,975	46	10,031,400	9,111,000	+ 920,400	Ord. Stk.	102 $\frac{1}{2}$	88	102 $\frac{1}{2}$	3 $\frac{1}{2}$
Madras & Southern Mahratta	2,939	30.4.43	286,500	+ 48,748	4	840,375	681,698	+ 158,677	"	105 $\frac{1}{2}$	87	107 $\frac{1}{2}$	6 $\frac{1}{2}$
Rohilkund & Kumaon	571	Nov., 1942	555,750	+ 5,072	8	115,950	99,909	+ 16,041	"	103 $\frac{1}{2}$	88 $\frac{1}{2}$	103 $\frac{1}{2}$	4 $\frac{1}{2}$
South Indian	2,349	20.4.43	191,693	+ 10,877	3	380,790	359,828	+ 20,962	"	—	—	—	—
Various													
Egyptian Delta	—	10.6.43	13,955	+ 2,968	10	98,431	75,685	+ 22,746	Pr. Sh.	5 $\frac{1}{2}$	1 $\frac{1}{2}$	2 $\frac{1}{2}$	Nil
Manila	—	—	—	—	—	—	—	—	B. Deb.	44	35	37 $\frac{1}{2}$	9 $\frac{1}{2}$
Midland in W. Australia	277	May, 1943	34,519	+ 7,674	48	355,515	229,955	+ 125,560	Inc. Deb.	95	90	100	—
Nigerian	1,900	31.3.43	51,142	+ 29,172	51	3,606,468	3,266,869	+ 339,599	—	—	—	—	—
South Africa	13,291	15.5.43	818,354	+ 90,692	6	5,426,575	4,911,865	+ 514,710	—	—	—	—	—
Victoria	4,774	Jan., 1943	1,480,058	+ 169,521	—	—	—	—	—	—	—	—	—

Note: Yields are based on the approximate current prices and are within a fraction of $\frac{1}{2}$ per cent.
† Receipts are calculated @ 1s. 6d. to the rupee

Argentine traffic is given in sterling calculated @ 16 $\frac{1}{2}$ pesos to the £
‡ ex dividend